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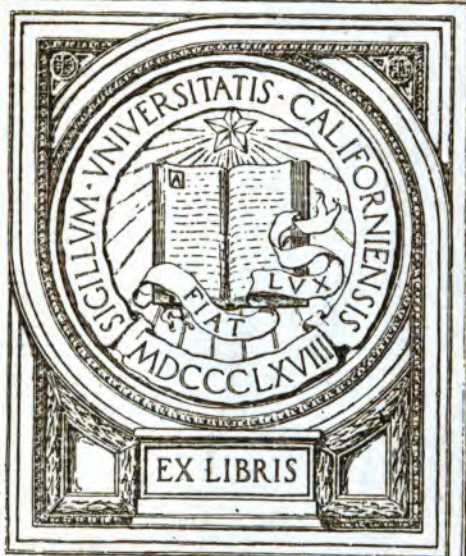
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THE
YOUNG
GARDENER'S ASSISTANT;

CONTAINING A CATALOGUE OF

Garden & Flower Seeds,

WITH

PRACTICAL DIRECTIONS UNDER EACH HEAD,

FOR THE CULTIVATION OF

CULINARY VEGETABLES AND FLOWERS,

ALSO DIRECTIONS FOR

CULTIVATING FRUIT TREES, THE GRAPE VINE, &c.;

TO WHICH IS ADDED,

A CALENDAR,

Showing the Work necessary to be done in the various departments
of Gardening in every month of the year.

EIGHTH EDITION, IMPROVED.

BY T. BRIDGEMAN,

GARDENER, SEEDSMAN, AND FLORIST, NEW-YORK.

"The end of all instruction should be the attainment of useful knowledge."

NEW-YORK:

For sale by T. Bridgeman, corner 18th st. and Broadway, immediately north of Union Place Park; G. C. Thorburn, No 11 John street; Alexander Smith, 388 Broadway, N. Y.; G. R. Garretson, Flushing, L. I.; Wm. Thorburn, Albany; Reynolds and Bateham, Rochester; Hovey & Co., Ellis & Bosson, Joseph Breck & Co., Boston; Hirst & Dreer, D. Landreth & Co., Philadelphia; J. Cairns, Newark, N. J.; R. Sinclair, Jr. & Co., Baltimore; J. F. Callan, Washington City; Turner & Hughes, Raleigh, N. C.; J. Houghton, Cleveland; J. C. Parkhurst, Cincinnati; T. Pringle and Co., New-Orleans and Natchez; John Thorburn, St. Louis, Missouri; and other Seedsmen and Florists in various parts of the United States; also, by Booksellers in general.

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PREFACE TO THE EIGHTH EDITION.

THE primary object in first publishing *The Young Gardener's Assistant*, was to enable our respectable seedsmen, while furnishing a catalogue of seeds for the use of the Kitchen and Flower Garden, to afford instructions, at a trifling expense, to such of their customers as may not have a regular gardener, and thereby save themselves the blame of those who may not have given their seeds a fair trial, for want of knowing how to dispose of them in the ground.

In appearing before the public with this eighth edition of the work, the Author cannot forbear to express his sense of obligation to his patrons in general, and to his fellow-seedsmen of New-York in particular, each of whom having by the interest they have taken in circulating the book, evinced their approbation of this humble attempt to serve both the seedsman and the gardener, in supplying directions for the management of a garden, in a manner calculated to insure success.

Within the last ten years, upwards of ten thousand copies of previous editions have been issued from the seed store of Mr. G. C. THORBURN, who has liberally subscribed for fifteen hundred copies of this edition. The Boston and Philadelphia seedsmen have also contributed largely to its circulation; and the Author has been gratified by learning that his labours are appreciated by eminent horticulturists, as the following extracts will demonstrate:—

“DEAR SIR,—You will see by the next month's *New York Farmer*, if you have not already seen by the Albany papers, that several copies of your *Young Gardener's Assistant* were given as PREMIUMS by the State Agricultural Society. Mr. D. B. Slingerland and myself were on the

committee for awarding premiums, and thought your work was deserving encouragement, and, that even in this small way, we might be of service in bringing it before the public as WORTHY OF BEING GIVEN AS PREMIUMS.

"Yours, very respectfully,

"ALEXANDER WALSH.

"Lansingburgh, November, 1835.

Extract from a review of this work in the Magazine of Horticulture, Botany, &c. published by Hovey & Co. Boston:

"The work is written in plain language, easily to be understood by the young beginner in gardening, who will find it a great help; and its value, even to the partly experienced person, is by no means of an ordinary character. IT IS ADAPTED TO OUR CLIMATE, and unlike compilations from English works, the novice is not led into disappointment by following the rules there laid down, as he generally is, when following the advice of the latter. We repeat, that as far as the book pretends, IT IS WORTH ALL OTHERS OF A SIMILAR CHARACTER THAT HAVE EVER BEEN PUBLISHED IN THIS COUNTRY; and its cheapness should place it in the hands of all new beginners."

It appears from an article in the *New-York Farmer and Horticultural Repository*, that the first edition of the work was noticed in France. The Editor informs us, in page 295 of the fourth volume, "That one of the leading articles in the second number of the present volume of the *Annales de L'Institute, Royal Horticole de Fromont*, is a long notice of the *Young Gardener's Assistant*, by Mr. T. Bridgeman of this city. The editor, Le Chevalier Soulange Bodin, speaks of the little work in very commendable terms."

Numerous other proofs could be adduced of the kind reception the work has met. Suffice it to state, that it has been extensively noticed, and recommended to public patronage, by editors of literary periodicals, and in many of those publications devoted to agricultural and horticultural pursuits, in various parts of this and other countries.

As the simplicity of cultivating the soil may lead many to think, that a wayfaring man though a fool, could not

easily err therein," it may be necessary to remind such, that the vegetable productions of the earth, being natives of various soils and climates, require peculiar management when cultivated in climates different to those in which nature first produced them; and, that although many species of plants in common use with us, will endure the heat of our summers, others can only be raised in perfection during mild and temperate weather, and some require artificial means to be used out of the ordinary seasons for gardening operations.

In the following pages, no efforts have been spared to impart useful information on the several branches of horticulture. The directions for the cultivation of vegetables are the result of twenty years' assiduous practice and observation as a market gardener; and it is presumed that the Author's experience in other departments of gardening has been sufficient to warrant him in this attempt to instruct those who have not hitherto become acquainted with the art. The Author considers it not derogatory to acknowledge, that he has frequently compared his ideas with those of other Authors, and that he has in some instances availed himself of the benefit of their instructions; but he is not aware that in so doing, he has adopted any ideas merely speculative; to avoid which, he has invariably submitted such manuscript to the scrutiny of experienced gardeners of his acquaintance, and the result has generally been such as to confirm him in his original positions.

It must appear evident to the reader, on a review of this work, that the Author in adopting the catalogue form, has been enabled to give as much information as is necessary to the cultivation of each particular kind of vegetable, in a condensed form; whereas, had he pursued the same course as most of his predecessors have done, his book would have been considerably larger, and the reader must have been at the trouble of perusing the greater part of it, at least twelve times in the course of a year. The Author, however, being aware of the convenience of a calendar, has in this edition annexed one, which he presumes is well calculated not only

to assist the memory of the gardener, but to show him, at one glance, the work necessary to be done in the various departments of gardening ~~in~~ every month of the year.

The Author having shown his primary object in adopting the catalogue form, presumes that his readers will not be disappointed; if they do not find there the names of all the species or varieties of plants they may wish to introduce into their gardens, the mode of culture of such being generally alike. If a catalogue of this kind was essential, it would occupy more space than is allotted for this book; besides it would be impossible to keep pace with our enterprising horticulturists and florists, who are continually introducing new species into our country. When, also, it is considered that there are a number of indigenous plants at present unknown to us, it will appear evident that the most extensive catalogue would not be perfect in this respect for any length of time; the Author, therefore, thought it unnecessary to attempt any thing more than that which is essential to the attainment of a tolerable share of the products of the garden, by ordinary exertion. How far he has succeeded in this respect, must be left for the reader to decide.

THOMAS BRIDGEMAN.

New York, January, 1840.

. The reader's attention is solicited to the elucidation immediately preceding the article Artichoke, relative to the varied climates to which our directions are calculated to apply.

This exposition particularly concerns such gardeners as cultivate land in a temperature different to that in the vicinity of New-York City.

GENERAL REMARKS

ON THE

MANAGEMENT OF A KITCHEN GARDEN.

BEFORE I commence the Catalogue, it may be necessary for me to direct the reader's attention to some important matters, essential to the good management of a Kitchen garden.

The mode of laying out the ground is a matter of taste, and may be left to the gardener himself; the form being a thing of trifling importance in the production of useful vegetables, or whether the ground be laid out in beds of four or ten feet wide, provided it be well worked, and the garden kept neat and free from weeds.

Those who have not a garden already formed, should, however, fix on a level spot where the soil is deep; but as we have not always a choice, I would recommend the reader to that which is within the reach, and ought to be the object of every man, namely, to make the most of what he has.

To this end, he may form a border round the whole garden, from five to ten feet wide, according to the size of the piece of land; next to this border, a walk may be made from three to six feet wide; the centre part of the garden may be divided into squares, on the sides of which a border may be laid out three or four feet wide, in which the various kinds of herbs may be raised, and also Gooseberries, Currants, Raspberries, Strawberries, &c. The centre beds may be planted with all the various kinds of vegetables. The outside borders facing the East, South and West, will be useful for raising the earliest fruits and vegetables; and the North border, being shady and cool, will serve for raising, and pricking out such young plants, herbs and cuttings, as require to be screened from the intense heat of the sun.

It may be necessary to state further, that though shady situations are useful for the purpose of raising Celery, Cabbage and other small plants, slips, &c. in the summer season, that all standard trees should be excluded from a Kitchen Garden, for the following reasons:—First, their roots spread so widely, and imbibe so much moisture from the ground, that little is left for the nourishment of any plant within the range of their influence;—Secondly, when in full leaf, they shade a large space, and obstruct the free circulation of the air, so essential to the well-being of all plants;—Thirdly, the droppings from trees are particularly injurious to whatever vegetation they fall upon.

Previous to entering on the work of a garden, the gardener should lay down rules for his future government. In order to this, he should provide himself with a blank book. In this he should first lay out a plan of his garden, allotting a place for all the different kinds of vegetables he intends to cultivate. As he proceeds in the business of planting his grounds, if he were to keep an account of every thing he does relative to his garden, he would soon obtain some knowledge of the art. This the writer has done for the last twenty years, and he flatters himself that a publication of the results of his practice will be interesting and useful to his readers.

If gardeners were to make it a rule to record the dates and particulars of their transactions relative to tillage, planting, &c., they would always know when to expect their seeds to come up, and how to regulate their crops for succession; and, when it is considered that plants of the *Brassica*, or cabbage tribe, are apt to get infected at the roots, if too frequently planted in the same ground, and that a rotation of crops in general is beneficial, it will appear evident that a complete register of every thing relative to culture is essential to the well-being of a garden.

One important point to be attended to, is to have a supply of good old manure, and other composts, ready to incorporate with the earth; also a portion of ashes, soot, tobacco dust, and lime, for the purpose of sowing over seed beds in dry

weather ; this will tend in a great measure to destroy insects, which sometimes cut off the young plants as fast as they come up.

If the ground cannot be all manured every year as it should be, it is of primary importance that those vegetables be provided for which most need manure. A perusal of the catalogue will enable the young gardener to judge of the kinds of garden products which require most. Lest I should not have been explicit enough in this particular, I would inform him that good rich manure is indispensably necessary for the production of Broccoli, Cauliflower, Cabbage, Lettuce, Spinage, Onions, Radishes, and Salads in general.

In the event of a scanty supply of manure, those kinds of vegetables which are raised in hills or drills, may be provided for by disposing of the manure immediately under the seeds or plants.

The next important matter is to have the ground in suitable condition to receive the seed ; I wish it to be understood that I am an advocate for early sowing and planting, even at the risk of losing a little seed ; provided the ground be fit to receive it. A light sandy soil will be benefitted if worked when moist, as such treatment will have a tendency to make it more compact ; on the contrary, if a clay soil be worked when too wet, it kneads like dough, and never fails to bind when drought follows ; and this not only prevents the seed from rising, but injures the plants materially in their subsequent growth, by its becoming impervious to the moderate rains, dews, air, and influence of the sun, all of which are necessary to the promotion of vegetation.

Some gardeners, as well as some writers, recommend certain fixed days for sowing and planting particular kinds of seed ; I think it necessary to guard my readers from being misled. The failure of crops may be often attributed to the observance of certain days for sowing. If some kinds of seed be sown when the ground is wet and cold, they will become chilled in the ground, and seldom vegetate. If they be sown in very dry weather, the germinative parts of the seed may become injured by the burning rays of the sun, or

the young plants may get devoured by insects as fast as they come up. To obviate these difficulties, I have generally allowed a week or ten days for the sowing of seed, intending the medium as the proper time for the vicinity of New-York. With this clearly borne in mind, the reader who observes the difference in the degrees of heat and cold in the different parts of the country, will know how to apply these instructions accordingly.

Much depends on the manures used on particular kinds of soil. The great art of improving sandy and clayey soils, is to give the former such dressings of clay, cow dung, and other kinds of manure, as will have a tendency to bind and make them more compact, and consequently more retentive of moisture; and to the latter, coats of horse dung, ashes, sand, and such other composts as may tend to separate the particles and open the pores of the clay, so as to cause it to approach as nearly as possible to a loam.

The nearer the ground approaches to a sandy soil, the less retentive will it be of moisture; the more to a clayey, the longer will it retain it; and the finer the particles of which the clay is composed, the more tenacious will it be of water, and consequently be longer in drying, and the harder when dry; but earth of a consistence that will hold water the longest, *without becoming hard when dry*, is of all others, the best adapted for raising the generality of plants in the greatest perfection. This last described soil is called loam, and is a medium earth, between the extremes of clay and sand.

I have, in most cases, recommended drills to be made at certain depths for the different kinds of seed; and when I have stated that the drills should be two inches deep, it is intended that the seed should be covered only one inch, which it will be when planted in these drills, and covered, and so in proportion for any other depth required. This may serve as a guide to the young gardener, but circumstances alter cases; if, for instance, some particular crops should fail, this would render it necessary, if the season be far advanced, to risk a further planting of seed, even if the

weather be hot and the ground dry; if this be planted a little deeper, it may escape the violent heat of the sun, and in the event of a shower, the ground would become sufficiently moist to bring it up; whereas it sometimes happens that seed sown after a shower does not vegetate until after the season is too far advanced to bring the crop to perfection.

The work of drilling by those who have no machine, may be performed in various ways; in some cases a plough is used, in others a small hoe, or a dibble drawn along the edge of a board or line; it is of little consequence which way the work is done, if it be well done. While I leave the gardener to make his own choice of tools, I would suggest that he be provided with two or three drilling machines; these, every handy man may make for himself; they should be in the form of a garden rake, with a stout heavy back, and five teeth, two inches broad, and tapered so as to enter the ground, and leave drills two inches deep. If one be made with the teeth eight inches apart, another twelve, and another fourteen, they will be useful in making drills for various seeds; and drills thus made serve instead of straining a line when transplanting Cabbage, Lettuce, Leek plants, &c. the line being stretched at one edge of the bed, and the drilling machine drawn straight by the line, makes five drills at once. If they are straight, they may be kept so, by keeping one drill open for the outside tooth to work in, until the ground be all drilled.

Gardeners practice different methods of covering up seed, some do it with a hoe, others with a rake or harrow; some draw a portion of the earth to the side of the bed; and after sowing the seed, return it regularly over the bed; in some particular cases a sieve is used, in others a roller. Rolling or treading in seed, is necessary in dry seasons, but it should never be done when the ground is wet.

There is nothing that protects young crops of Turnips, Cabbage, and other small plants, from the depredations of the fly, so well as rolling; for when the surface is rendered completely smooth, these insects are deprived of the harbour they would otherwise have under the clods and small lumps of earth. This method will be found more effectual than

soaking the seed in any preparation, or dusting the plants with any composition whatever ; but as the roller must only be used previous to, or at the time of sowing the seed, and not even then if the ground be wet, it is necessary that the gardener should have a hogshead always at hand in dry weather, containing infusions made of waste tobacco, lime, soot, cow dung, elder, burdock leaves, &c. A portion of these ingredients, or any other preparation that is pernicious or poisonous to insects, without injuring the plants, thrown into a hogshead kept filled up with water, if used moderately over beds of young plants in dry weather, would, in almost every case, insure a successful crop.

Saltpetre is pernicious to many species of insects ; it is also an excellent manure, and may be used to great advantage when dissolved in the proportion of one pound to four gallons of water. This liquid applied to plants through the rose of a watering pot, will preserve health and vigour. Soap suds are equally beneficial, if used occasionally in the same manner—say once a week. These remedies applied alternately, have been known to restore Melon and Cucumber vines from the ravages of the yellow fly, bugs, blight, &c., and to keep plants in a thriving condition.

As liquid, however, cannot be conveniently used on a large piece of land, it may be necessary, if insects are numerous, to sow tobacco dust mixed with road dust, soot, ashes, lime, or the dust of charcoal, in the proportion of half a bushel per acre, every morning, until the plants are free or secure from their attacks. Turnip seed will sometimes sprout in forty-eight hours. Cabbage seed ought to come up within a week after it is sown ; but it sometimes happens that the whole is destroyed before a plant is seen above ground ; the seedsman, in this case, is often blamed without a cause.

A correspondent has communicated the result of an experiment he has tried for preventing the attacks of flies or fleas, on turnips. He says, “ steep your seed in a pint of warm water for two hours, in which is infused one ounce of saltpetre ; then dry the seed, and add currier’s oil sufficient

to wet the whole; after which mix it with plaster of Paris, so as to separate and render it fit for sowing." Fish oil is known to be destructive to ants and various other small insects, but it is difficult to apply to plants.

In the summer season, Broccoli, Cabbage, Cauliflower, &c. are particularly subject to the ravages of grubs and caterpillars; to prevent this wholly, is perhaps impossible, but it is not difficult to check these troublesome visitors; this may be done, by searching for them on their first appearance, and destroying them. Early in the morning, grubs may be collected from the earth, within two or three inches of such plants they may have attacked the night previous.

The approach of caterpillars is discoverable on the leaves of Cabbages, many of which are reduced to a thin white skin, by the minute insects which emerge from the eggs placed on them; these leaves being gathered and thrown into the fire, a whole host of enemies may be destroyed at once; whereas, if they are suffered to remain, they will increase so rapidly, that in a few days the plantation, however extensive, may become infested; now, when once these arrive at the butterfly or moth stage of existence, they become capable of perpetuating their destructive race to an almost unlimited extent. The same remarks apply to all other insects in a torpid state.

Worms, maggots, snails, or slugs, may be driven away, by sowing salt or lime in the spring, in the proportion of two to three bushels per acre, or by watering the soil occasionally with salt and water, to the quantity of about two pounds of salt to four gallons of water; or the slug kind, may be easily entrapped on small beds of plants, by strewing slices of turnip on them late in the evening; the slugs or snails will readily croud on them, and may be gathered up early in the morning (before sunrise) and destroyed.

Moles may be annoyed and driven away, by obstructing the passage in their burrows with sticks smeared with tar. First insert a clean stick from the surface through the burrows as a borer; then dip others in tar, and pass them through into the floor of the burrows, being careful not to

wipe off the tar in the operation. Tar is also an effectual remedy against smut in wheat.—After being heated in a kettle until it becomes thin, it may be stirred in amongst the grain until it becomes saturated. The wheat should afterwards be mixed with a sufficient quantity of wood ashes to dry and render it fit for sowing.

To prevent depredations from crows, steep corn in strong saltpetre brine, sow it over the land, or steep your seed corn, and if the crows once get a taste, they will forsake the field.

Perhaps the next important point to be attended to, is the most proper rotation of crops. Virgil, who was a philosopher as well as a poet, very justly observes, that “THE TRUE REPOSE OF THE EARTH IS A CHANGE OF ITS PRODUCTIONS.”

It is a curious fact, that a plant may be killed by the poison which it has itself secreted, as a viper may be stung to death by its own venom. Hence it has been very generally noticed, that the soil in which some particular vegetables have grown, and into which they have discharged the excretions of their roots, is rendered noxious to the prosperity of plants of the same or allied species, though it be quite adapted to the growth and support of other distinct species of vegetables.

It is proved by experience, that fall Spinach is an excellent preparative for Beets, Carrots, Radishes, Salsify, and all other tap, as well as tuberous-rooted vegetables.

Celery, or Potatoes, constitute a suitable preparative for Cabbage, Cauliflower, and all other plants of the *Brassica* tribe; also Artichokes, Asparagus, Lettuce and Onions, provided that such ground be well situated, which is a circumstance always to be duly considered in laying out a garden.

Lands that have long lain in pasture are for the first three or four years after being tilled, superior for Cabbage, Turnips, Potatoes, &c. and afterwards for culinary vegetables in general.

The following rules are subjoined for further government:

Fibrous-rooted plants may be alternated with tap, or tuberous-rooted, and *vice versa*.

Plants which produce luxuriant tops, so as to shade the land, to be succeeded by such as yield small tops, or narrow leaves.

Plants which during their growth require the operation of stirring the earth, to precede such as do not admit of such culture.

Ground which has been occupied by Artichokes, Asparagus, Rhubarb, Sea Kale, or such other crops as remain long on a given spot, should be subjected to a regular rotation of crops, for at least as long a period as it remained under such permanent crops. Hence in all gardens judiciously managed, the Strawberry bed is changed every three or four years, till it has gone the circuit of all the compartments; and Asparagus beds, &c. should be renewed on the same principle, as often as they fail to produce luxuriantly. Indeed, no two crops should be allowed to ripen their seeds in succession in the same soil, if it can be avoided; because, if it be not exhausted by such crops, weeds will accumulate more than on beds frequently cultivated.

Manure should be applied to the most profitable and exhausting crops; and the succession of crops should be so arranged, that the ground be kept occupied by plants either valuable in themselves, or which may contribute to the increased value of those which are to follow; and the value of the labour required to mature vegetables, and prepare them for market, should be always taken into consideration.

Many kinds of seed, such as Asparagus, Capsicum, Celery, Feticus, Leek, Lettuce, Onion, Parsnip, Parsley, Rhubarb, Salsify, Spinage, &c. will not vegetate freely in dry weather, unless the ground be watered or rolled; where there is no roller on the premises, the following may answer for small beds as a substitute: after the seed is sown and the ground well raked, take a board (or boards) the whole length of the bed, lay them flat on the ground, beginning at one edge of the bed, walk the whole length of the bed, this will press the soil on the seed, then shift the boards

till you have thus gone over the whole bed. In the absence of boards; tread in the seed with your feet, or strike on the beds with the back of your spade or shovel.

If it be necessary at any time to sow seed in dry weather, it is recommended to soak the seed in water, and to dry it with sulphur. This practice, with attentive watering, will cause the seed to vegetate speedily.

If it should be requisite to transplant any thing when the ground is dry, the transplanting should be always done as soon as the earth is fresh turned over, and the roots of the plants should be steeped in mud made of rich compost, before they are set out.

I have, in most cases, recommended seed to be sown in drills drawn from eight to twelve inches apart, in preference to sowing broad cast, because the weeds can be more easily destroyed by means of a small hoe; and which, properly used, greatly promotes the growth of young plants.

The following table may be useful to the gardener, in showing the number of plants, or trees, that may be raised on an acre of ground, when planted at any of the under-mentioned distances.

Distance apart	No. of Plants	Distance apart	No. of Plants
1 foot	43,560	9 feet	537
1½ feet	19,360	12 feet	362
2 feet	10,890	15 feet	193
2½ feet	6,969	18 feet	134
3 feet	4,840	21 feet	98
4 feet	2,722	24 feet	75
5 feet	1,742	27 feet	59
6 feet	1,210	30 feet	48

The preceding table may serve as a guide to such as are not expert in arithmetic, in laying out a garden, as it shows

at one view many proportions of an acre of land, in squares of different dimensions. The last line, for instance, shows that if forty-eight trees be planted on an acre, each thirty feet apart, that there may be forty-eight beds of thirty feet square, or thirty beds of forty-eight feet square, formed from the same quantity of land. An allowance of about one-eighth must, however, be made from the above calculation for walks and paths.

The table may also serve to show the gardener how to dispose of any given quantity of manure, that may be allotted for an acre of ground. If, for instance, it requires three hundred and two trees to plant an acre when placed twelve feet from each other, it will require as many heaps of manure to cover the same quantity of ground, if dropped the same distance apart. It therefore follows, that if one hundred loads be allowed to the acre, each load must be divided into three heaps. If seventy-five loads only be allowed, every load must be divided into four heaps, and so on in proportion to the quantity allowed. But if the gardener should choose to drop his heaps five paces or fifteen feet apart, he may make such distribution of his loads as to have one hundred and ninety-three heaps on the acre of land ; in which case, by dividing each load into four heaps, he will require only forty-eight loads to cover the acre, and he may decrease the quantity still more, by allowing greater distances from heap to heap, or by dividing his loads into smaller proportions, so as to accommodate himself to whatever quantity of manure he may allot to any given quantity of ground.

As it may not be generally known that some species of seeds are apt to lose their vegetative qualities much sooner than others, the following hints are subjoined as some rule for the gardener's government, provided the seeds are carefully preserved, and not exposed to excess of heat, air, or dampness :—

Parsnip, Rhubarb, and other light scale-like seeds, cannot be safely trusted after they are a year old.

Beans and Peas of different species, Capsicum, Carrot,

Cress, Leek, Nasturtium, Okra, Onion, Salsify, Scorzonera, and small Herb seeds in general, may be kept two years.


Artichoke, Asparagus, Egg-plant, Endive, Feticus, Lettuce, Mustard, Parsley, Skirret and Spinach seed, may with care be preserved three years.

Broccoli, Cauliflower, Cabbage, Celery, Kale, Radish, and Turnip seed, will keep four years, if properly attended to.

Beet, Cucumber, Gourd, Melon, Pumpkin and Squash, also Burnet, Chervil, and Sorrel Seed, have been known to grow freely when five and even seven years old; but it is not prudent to venture seed in the garden, of the soundness of which we are not certain.

In order to put such on their guard as may attempt to raise seed either for their own use or for the market, I would observe that great care is necessary, as it is an indubitable fact, that if seed of similar species be raised near each other, degeneracy will be the consequence; it is, therefore, difficult for any one man to raise all sorts of seed, good and true to their kind, in any one garden.

If roots of any kind become defective, they are unfit for seed, as the annexed fact will show. I once planted for seed some beautiful orange-coloured roots of Carrots, but as they had been previously grown with some of a lemon-colour, they produced seed of a mixed and spurious breed, and as this is not a solitary instance of degeneracy from the like cause, I have come to the conclusion, that as in the animal frame, so it is in the vegetable system—disorders very frequently lay dormant from one generation to another, and at length break out with all their vigour; I would therefore advise seed growers not to attempt to “bring a clean thing out of an unclean,” but if they find a mixture of varieties amongst their seed roots, to reject the whole, or they will infallibly have spurious seed.

 In order to aid the novice in gardening, the following brief classification of such species and varieties as comprise our catalogue of vegetable seeds is submitted, and it is presumed that the connecting links, and explication of this table will not be altogether uninteresting to the experienced gardener and seedsman.

CATALOGUE.	Hardy.	Half Hardy.	Tender.	Quick in germinating.	Medium in germinating.	Tardy in germinating.	Capable of being transplanted.
Artichoke, . . .	0	0	.	.	0	.	0
Asparagus, . . .	0	.	.	.	0	.	0
Beans, (Eng. dwarfs)	0	.	.	.	0	.	0
Beans, (Kidney do.)	.	.	0	0	.	.	.
Beans, pole, . . .	.	.	0	0	.	.	.
Beet, . . . . .	.	0	.	.	0	.	.
Borecole or Kale, &c.,	.	0	.	0	.	.	0
Broccoli, . . . .	.	0	.	0	.	.	0
Cauliflower, . . .	.	0	.	0	.	.	0
Cabbage, . . . .	.	0	.	0	.	.	0
Carrot, . . . . .	.	0	.	.	0	.	.
Celery, . . . . .	.	0	.	.	.	0	0
Corn Salad, . . .	0	.	.	.	.	0	.
Cress, . . . . .	.	0	.	0	.	.	.
Cucumber, . . . .	.	.	0	0	.	.	.
Egg Plant, . . . .	.	.	0	.	0	.	0
Endive, . . . . .	.	0	.	0	.	.	0
Indian Corn, . . .	.	.	0	0	.	.	.
Leek,	0	.	.	.	.	0	0
Lettuce, . . . . .	.	0	.	0	.	.	0
Melon, . . . . .	.	.	0	0	.	.	.
Okra, . . . . .	.	.	0	.	0	.	.
Onion,	0	.	.	.	0	.	.
Parsley,	0	.	.	.	.	0	.
Parsnip,	0	.	.	.	.	0	.
Peppers, . . . . .	.	.	0	.	0	.	0
Peas,	0	.	.	.	0	.	.
Pumpkin, . . . . .	.	.	0	0	.	.	.
Radish, . . . . .	.	0	.	0	.	.	.
Salsify,	0	.	.	0	.	.	.
Spinach,	0	.	.	.	.	0	.
Squash, . . . . .	.	.	0	0	.	.	.
Tomatoc, . . . . .	.	.	0	0	.	.	0
Turnip, . . . . .	.	0	.	0	.	.	.
Herbs in general, .	.	.	0	.	.	0	0

In explication of the table, it may be necessary first to premise, that in the classification, as respects different seeds germinating, it is conceded that if some of those denominated medium were put upon an equal footing with some of the class denominated quick-growing, they would vegetate in about the same time. For instance, Peas would sprout as quick as Kidney Beans in equal temperature; but Peas, being hardy, are generally planted a month earlier in the season. If Beans were planted at the same time, they would rot for want of genial heat necessary to their germinating.

Many of the species denominated medium and tardy, require considerable moisture to produce vegetation; when not attainable, tardiness of growth, and sometimes total failure, are the consequence; judicious gardeners, however, generally obviate difficulties of this nature, by sowing such seeds at the most favourable seasons. Those who delay sowing Carrot, Celery, Leek, Parsley, Onion, Parsnip, Spinach, &c. until dry summer weather, render themselves liable to disappointment and loss thereby.

As some gardeners are apt to attribute all failures of seed to its defectiveness, I shall, in the hope of convincing such of their error, offer a few observations under each head of the table.

The first and second classes, denominated hardy and half hardy, are subjected to risk in unpropitious seasons, from unfitness of the soil to promote vegetation, rendered so by cold rains and variable weather. If sprouted seed survive a severe chill, it is the more susceptible of frost, to which it is frequently subjected early in the season. Some species of plants that in an advanced stage of growth will stand a hard winter, are often cut off by very slight frost while germinating, especially if exposed to heat of the sun after a frosty night, or while in a frozen state. Cabbage, Carrot, Celery, Turnip, and many other growing plants, which survive the ordinary winters of England, are here classed as half hardy, for the reasons above stated.

The third class, or most tender species, frequently perish

from excess of rain. Lima Beans, for instance, have often to be replanted three or four times in the month of May, before any will stand. Melons, Cucumbers, Egg Plants, Tomato Plants, &c.. are also often cut off by variableness of the weather; indeed it is unreasonable to expect natives of tropical climates to thrive or even live in a climate adverse to that in which nature first produced them, unless protected or nursed in unpropitious seasons, as recommended under the head forcing vegetables. Those who plant tender things in open gardens early in the season, must reconcile themselves to loss in the event of unfavourable weather, instead of throwing blame on the seedsman.

The fourth class, embracing such species and varieties, as from their nature are apt to vegetate quickly, are very liable to be devoured by insects before they make any show on the surface. Turnip seed, for instance, will sprout within forty-eight hours after being sown; and under favourable circumstances, most of the species of this class will come up within a week; but if insects attack the seed beds in dry weather, a total loss of crops will be the consequence. Every experienced farmer is convinced of this fact, by having frequently to sow his turnip ground three or four times before he can get any to stand.

Sometimes a sudden shower of rain will cause plants to grow out of the reach of insects, but every good gardener should have his remedies at hand to apply to seed beds in general, and especially to those in which plants are raised for the purpose of being transplanted.

Those *species and varieties*, embraced in the *fifth and sixth columns*, often take from two to three or four weeks to vegetate in unfavourable seasons. Some plants are retarded by cold, others by excess of dry weather; and at such times, seed may fail to vegetate for want of pressure. In the event of drought after heavy rains, seed and young plants often perish through incrustation of the soil, and from other untoward circumstances which can neither be controlled or accounted for, even by the most assiduous and precise gardener. It must, however, be conceded, that failures often occur, through

seed being deposited too deep in the ground, or left too near the surface; sometimes, for want of sufficiency of seed in a given spot, solitary plants will perish, they not having sufficient strength to open the pores of the earth, and very frequently injudicious management in manuring and preparing the soil will cause defeat.

I have been induced to expatiate, and in the *seventh range of the preceding table*, to designate such plants as are generally cultivated, first in seed beds, and afterwards transplanted for the purpose of being accommodated with space to mature in, with a view to answer at once the thousand and one questions asked by inexperienced cultivators, at my counter.

Some persons, from ignorance of the nature and object of raising plants for transplanting, ask for pounds of seed, when an ounce is amply sufficient for their purpose. For example, one ounce of Celery seed will produce ten thousand plants. An ounce of Cabbage seed will produce from three to four thousand, sufficient when transplanted to cover nearly half an acre of land, which land, if sown with Spinach, for instance, would require from four to six pounds of seed.

To prevent any altercation on this subject, I would observe in conclusion, that many other vegetables would admit of being transplanted besides those designated in our table; but as there is considerable risk and trouble, inseparable from the operation, it is needless to apply it, unless there are paramount advantages to be gained, the reverse of which would be the case, under ordinary circumstances, with the generality of those plants not thus designated.

Instead of answering any more queries, I think I shall for the future follow the example of the truly eccentric Abernethy, refer all enquirers for information to my books, which contain an answer to every important question that has been put to me on the subject of gardening since I became an author.

T. BRIDGEMAN.

New-York, January, 1840.

CATALOGUE,

&c. &c.

* * Previous to the commencement of our Catalogue, it may be necessary to remind the reader, that the directions which follow, are founded on the results of practical experience in the vicinity of NEW-YORK CITY, where the soil is generally susceptible of gardening operations towards the end of March. These directions may, however, be applied to all other parts of the UNITED STATES, by a *minute observance* of the difference in temperature.

In the extreme northern parts of the State of New-York, as well as in all other places similarly situated, the directions for the beginning of April may apply to the latter end of the same month, with very few exceptions.

In our SOUTHERN STATES, the directions for APRIL, which may be considered as the first gardening month in the EASTERN, WESTERN and MIDDLE STATES, will apply to January, February, or to whatever season gardening operations may commence in the respective States.

In the *varied climates* of each particular State, if the same rule of application be pursued to the end of the Calendar, success is certain.

ARTICHOKE.

ARTICHAUT. *Cynara*.

VARIETIES.

Cynara Scolymus, or French. | *Cynara Hortensis*, or Globe.

THE garden Artichoke, a native of the South of Europe, is much cultivated for the London and Paris markets. It is a perennial plant, producing from the root annually its large squamose heads, in full growth, in June or July, until Octo-

ber or November. The Globe Artichoke, which produces large globular heads, is best for general culture, the heads being considerably larger, and the eatable parts more thick and plump.

Both sorts may be raised from the seed, or young suckers taken from old plants in the spring. A plantation of Artichokes will continue to produce good heads six or seven years, and sometimes longer; but it must be observed, that if a supply of this delicious vegetable be required throughout the season, a small plantation should be made from suckers every spring, for a successive crop, as the young plants will continue to produce their heads in perfection, after the crops of the old standing ones are over.

The most likely way to obtain a supply of Artichokes from seed, is to sow the seed the latter end of March, or early in April, in a bed of good rich earth, or it may be planted in drills one inch deep, and about twelve inches apart. The ground should be light and moist, not such as is apt to become bound up by heat, or that in consequence of too large a proportion of sand, is likely to become violently hot in summer, for this is extremely injurious to these plants. After the plants are up, they should be kept free from weeds, and the earth often loosened around them.

The business of transplanting may be performed in cloudy or wet weather, at any time after the plants are from nine to twelve inches high. Having fixed upon a proper soil and situation, lay on it a good quantity of rotten dung, and trench the ground one good spade or eighteen inches deep, incorporating the manure therewith; this being done, take up the plants, and after shortening their tap roots a little, and dressing their leaves, plant them with a dibble, in rows five feet asunder, and two feet plant from plant in the row, leaving part of their green tops above ground, and the hearts of the plants free from any earth over them, and give each plant a little water to settle the roots.

The winter dressing of Artichokes is an important operation; on it depends much of their future success. This should not be given them as long as the season continues

mild, that they may have all possible advantage of growth, and be gradually inured to the increasing cold weather ; but it should not be deferred too late, lest by the sudden setting in of hard frost, to which we are subject in the Northern States ; the work be neglected, and the plants consequently exposed to devastation and loss.

In the first place, cut all the large leaves close to the ground, leaving the small ones which rise from the hearts of the plants ; after this, line and mark out a trench in the middle, between each row, from fourteen to sixteen inches wide, presuming that the rows are five feet apart, as directed. Then lightly dig the surface of the beds from trench to trench, burying the weeds, and as you proceed, gather the earth around the crowns of the plants to the height of about six inches, placing it in gently between the young rising leaves, without burying them entirely under it ; this done, dig the trenches one spade deep, and distribute the earth equally between and on each side of the plants, so as to level the ridges, giving them at the same time a neat rounding form ; finish, by casting up with a shovel the loose earth out of the bottom of the trenches evenly over the ridges, in order that the water occasioned by heavy rains, &c. may immediately run off ; on which account the trenches ought to have a gentle declivity, as the lodgement of water about the roots in winter, is the greatest evil and danger they have to encounter, even greater than the most severe frosts to which we are subject

The beds are to remain so, until there is an appearance of hard frost, when they should be covered with light dung, litter, leaves of trees, or the like, the better to preserve the crowns and roots from its rigour. In this manner, the roots will remain in perfect safety all the winter. As soon as the very severe frosts are over, the beds must be uncovered, and when you perceive the young shoots begin to appear above ground, or rather one or two inches up, then, and not before, proceed to levelling down the beds into the alleys or trenches, rounding them in a neat manner ; then dig in the short manure, and loosen all the earth around the plants

At the same time, examine the number of shoots arising on each stool, selecting three of the strongest and *healthiest-looking* on every stool to remain ; all above that number are to be slipped off close to the roots with the hand, unless you want such to make new plantations with, in which case any extra number for that purpose are to remain on the parent plants, until they are about eight or ten inches high from their roots, or junction with the old plants, when they are to be slipped off, and planted in a bed prepared in the same manner as directed for the young plants, taking care at the same time to close the earth about the crowns of the roots, and drawing it a little up to the remaining suckers.

Observe, the spring dressing is to be given when the plants are in the above described state, whether that happens in February, March or April, occasioned by the difference of climate, in the respective States, or by the earliness or lateness of the spring.

The gardeners, near London, generally take off the side suckers, or small Artichokes, when they are about the size of a hen's egg. These meet with a ready sale in the markets, and the principal heads that are left are always larger and more handsome. The maturity of a full-grown Artichoke is apparent by the opening of the scales ; and it should always be cut off before the flower appears in the centre ; the stem should be cut close to the ground at the same time.

Artichokes are esteemed as a luxury by epicures. To have them in perfection, they should be thrown into cold water as soon as gathered, and after having been soaked and well washed, put into the boiler when the water is hot, with a little salt, and kept boiling until tender, which generally takes, for full grown Artichokes, from an hour and a half to two hours. When taken up, drain and trim them ; then serve them up with melted butter, pepper, salt, and such other condiment as may best suit the palate.

ASPARAGUS.

ASPERGE. *Asparagus officinalis*.

VARIETIES.

Gravesend.	|	Large Battersea.
Large White Reading.	|	Large German, or Giant.

This plant is a native of cold climates, and is found growing wild in Russia and Poland, where it is eaten by the cattle as grass. It will endure the severity of our winters, and produce its buds, when the weather gets mild; but as garden products are generally scarce after a hard winter, the gardener who studies his interest will make the most of the spring season, and raise all he can before the markets become glutted; to this end, he is recommended to prepare for forcing this vegetable, as soon as the coldest of the winter is past.—(See article on Forcing Vegetables.)

Asparagus plants may be raised by sowing the seed in the fall as soon as ripe, or in March, and the early part of April. It requires some of the best ground in the garden. The seed may be sown in drills, ten or twelve inches asunder, and covered half an inch with light earth. When the plants are up, they will need a careful hoeing, and if cultivated, and kept free from weeds, they will be large enough to transplant when they are a year old. Some keep them in the nursery bed until two years old.

A plantation of Asparagus, if the beds are properly dressed every year, will continue to produce good buds for twenty years or more.

New plantations of Asparagus may be made in Autumn, or before the buds get far advanced in Spring, say February, March, or April, according to situation and circumstances. The ground for the bed must not be wet, nor too strong or stubborn, but such as is moderately light and pliable, so as it will readily fall to pieces in digging or raking, and in a situation that enjoys the full sun. It should have a large supply of good rotten dung, three or four inches thick, and then be regularly trenched two spades deep,

and the dung buried equally in each trench twelve or fifteen inches below the surface. When this trenching is done, lay on two or three inches of well rotted manure all over the surface, and dig the ground over again eight or ten inches deep, mixing this top dressing, and incorporating it well with the earth.

In family gardens, it is customary to divide the ground thus prepared into beds, allowing four feet for every four rows of plants, with alleys two feet and a half wide between each bed. Strain your line along the bed six inches from the edge; then, with a spade, cut out a small trench or drill close to the line, about six inches deep, making that side next the line nearly upright, and when one trench is opened, plant that before you open another, placing the plants upright ten or twelve inches distance in the row, and let every row be twelve inches apart.

The plants must not be placed flat in the bottom of the trench, but nearly upright against the back of it, and so that the crown of the plants may also stand upright, and two or three inches below the surface of the ground, spreading their roots somewhat regularly against the back of the trench, and at the same time drawing a little earth up against them with the hand as you place them, just to fix the plants in their due position until the row is planted; when one row is thus placed, with a rake or hoe draw the earth into the trench over the plants, and then proceed to open another drill or trench, as before directed; and fill and cover it in the same manner, and so on till the whole is planted; then let the surface of the beds be raked smooth and clear from stones, &c.

Some gardeners, with a view to have extra large heads, place their plants sixteen inches apart in the rows, instead of twelve, and by planting them in the *quincunx* manner, that is, by commencing the second row eight inches from the end of the first; and the fourth even with the second, the plants will form *rhomboidal* squares, instead of *rectangular* ones, and every plant will thus have room to expand its roots and leaves luxuriantly.

The above directions are intended for family gardens. Those who may wish to raise Asparagus in large quantities for market, should prepare the ground with a plough, and plant two rows in each bed, which may be carried to any length required. If several beds are intended, they may be planted in single rows four or five feet apart, in order that the plough may be worked freely between them. Frequent ploughing will cause the roots to spread, so as to widen the beds, and the winter dressing may be performed in a great measure with the plough. After the Asparagus is cut, the ground between the beds may be ploughed, and planted with Cabbage, Potatoes, or any other vegetable, usually cultivated in rows.

Winter Dressing of Asparagus Beds.

About the begining of November, if the stalks of your Asparagus turn yellow, which is a sign of their having finished their growth for the season, cut them down close to the earth, carry them off the ground, and clear the beds carefully from weeds.

Asparagus beds must have an annual dressing of good manure ; let it be laid equally over the beds, two or three inches thick, after which, with a fork made for the purpose, (which should have three flat tines,) dig in the dung quite down to the crowns of the plants, by which means the roots will be greatly benefitted ; as the winter rains will wash the manure down amongst them. It is the practice with some gardeners to dig the alleys at every autumn dressing, and to cover the beds with the soil so taken out ; this may be done for the first two years after the beds are made, but not afterwards ; as, when the plants are in full growth, their roots and crowns extend into the alleys, and the digging them out frequently destroys plants, or renders them too weak to produce buds in perfection. The beds will be greatly benefitted if covered to the depth of several inches with leaves, sea-weed, or long litter from the livery stables.

The seedling Asparagus should also have a slight dressing, that is, to clear the bed from weeds, and then to spread

an inch or two in depth of light dung over it, to defend the crown of the plants from frost.

Spring Dressing of the Beds.

This work should be done from about the latter end of March, to the middle of April, or just before the buds begin to rise. After clearing away all the long litter, or whatever may incumber the ground, spread the short dung over the whole surface, and dig it in : if the alleys be dug at the same time, it will be very beneficial to the plants. Care must be taken at this season not to wound the crowns with the tines of the fork, but forking the beds should not be neglected ; as the admitting of sun and rain into the ground, induces the plants to throw up buds of superior size ; to promote such a desirable object, the ground should be kept clear of weeds at all seasons, as these greatly impoverish, and frequently smother the plants.

The gardeners of England raise *Asparagus* in great perfection ; and sometimes have buds weighing from three to five ounces each. Loudon says, in his *Encyclopædia of Gardening*, that one grower alone has eighty acres entirely under this crop for the London markets.

Asparagus plants will not produce buds large enough to eat for general use, in less than three years from the time of planting, but in the fourth year, when the shoots are three or four inches high, they will bear extensive cutting, which should, however, be discontinued when no large buds are thrown up. The best way of cutting, is to slip the knife down perpendicularly close to each shoot, and cut it off slantingly, about three or four inches within the ground, taking care not to wound any young buds coming from the same root, for there are always several shoots advancing in different stages of growth.

Asparagus is considered a wholesome vegetable, and should not be kept long after it is gathered ; after being well washed, it may be tied in bundles of about a dozen buds each, and boiled in water, seasoned with salt, until tender,

which will be in about twenty minutes ; take it up before it loses its true colour and flavour, and serve up on toasted bread, with melted butter, &c.

BEANS, (English Dwarfs.)

FEVE DE MARAIS. *Vicia faba*.

VARIETIES.

Early Mazagan.
Early Lisbon.
Early Long Pod.
Large Windsor.
Large Toker.
Broad Spanish-

Sandwich Bean.
Green Genoa.
Dwarf Cluster.
White Blossom.
Green Nonpareil.
Sword Long Pod.

THE principal cause of these garden Beans not succeeding well in this country, is the summer heat overtaking them before they are podded, causing the blossom to drop off prematurely ; to obviate this difficulty, they should be planted as early in the year as possible ; as recommended in the article, "Forwarding Broad Beans." They are generally planted in England, from October to April, for early crops, and from that time to July, for late crops. It sometimes happens that autumn plantings are injured by the extremity of their winters, but they never miss having an average crop.

In the Eastern, Western, and Middle States, if a few of the best varieties of these Beans be planted in the open ground, as soon in the season as it can be brought into good condition, they will come into bearing in regular succession, according to their different degrees of earliness, and plantings may be repeated every ten days of the first spring month ; but it is only from those that are planted early, that any tolerable produce can be expected, as they become deficient in quality, as well as in quantity, on the approach of extreme warm weather.

In the Southern States, they may be planted in succession throughout the autumn and winter months, which will cause them to bear early in the ensuing season.

The best mode of planting is in drills, drawn two inches deep, in which the seed beans may be dropped two or three inches apart, according to their size, and the drills may be from two to three feet assunder. A strong clayey soil is the most suitable; but they often do well in moderately light ground, provided it be well trodden, or rolled, after the beans are planted.

As soon as the Beans are three or four inches high, they will need a careful hoeing, and if some earth be drawn up to their stems, three or four times in the course of their growth, it will greatly refresh and strengthen them.

When they arrive at full bloom, and the lower pods begin to set, the tops may be broken off. If this be done at the proper time, it will promote the swelling of the pods, as well as their early maturity; for having no advancing tops to nourish, the whole effort of the root will go to the support of the fruit.

Broad Beans are particularly subject to green bugs. Tobacco water, or salt water, will sometimes destroy them; but the most certain way is to watch their first appearance, and to pick off that part on which they first settle, and burn it; or if such plants be cut down close to the ground, they will produce fresh shoots which may bear a good crop.

One quart of seed Beans will be required for every sixty feet of row, allowing the smallest sorts to be planted about two inches apart, and the largest four inches.

The Beans should be gathered young, and shelled while fresh. After having been washed, let them be boiled in plenty of water with a little salt and a bunch of green parsley. They take from thirty to forty minutes boiling, according to age, and may be served up with melted butter, gravy, &c.; but they are very good when cooked and eaten with fat pork, or good old-fashioned Hampshire bacon.

BEANS. (Kidney Dwarf.)

HARICOT. *Phaseolus vulgaris*, etc.

VARIETIES.

Early Mohawk.	Large White Kidney Dwarf.
Early Valentine.	White Cranberry Dwarf.
Early Yellow Six Weeks.	Red Cranberry Dwarf.
Early Dun-Colored, or Quaker.	Yellow Cranberry Do.
Early China Dwarf.	Warrington, or Marrow.
Quails' Head.	Refugee, or Thousand and One.
Early Rob Roy.	Marble Swiss Bean.
Early Black Dwarf.	Royal Dwarf Kidney, or French.

These varieties of Beans being natives of India, South America, and other warm climates, will not endure the least cold, it is therefore always hazardous to plant them in the open ground until settled warm weather. The earliest varieties if planted towards the end of April, or the first week in May, will come to perfection in from six to eight weeks after planting. Some of the later varieties will keep longer in bearing, and are esteemed by some on that account. These, with some of the early varieties, may be planted in the months of May and June, and if a regular succession of young Beans be required throughout the summer, some of the varieties should be planted every two weeks, from the last week in April until the beginning of August.

These Beans require a light rich soil, in which they should be planted in hills, three or four in a hill, or drills about two inches deep, and the Beans two or three inches from each other; the drills may be from two to three feet apart. The Refugees are best planted in hills. As the Beans progress in growth, let them be carefully hoed, drawing some earth up to their stems at the same time, which will cause them to be soon fit for the table.

Many gardeners, anxious to have Beans early, are apt to begin planting too soon in the season, and very frequently lose their first crops. It should be recollected, that these Beans are next to Cucumbers and Melons for tenderness, and will always grow quicker and yield better, if the planting be delayed until settled warm weather. The Early Mohawk

is the hardiest, and may sometimes succeed well, if planted about the middle of April.

One quart of Kidney Beans will plant from three hundred and fifty to four hundred hills, according to the size of the Beans, allowing four Beans to each hill, or from two hundred and thirty to two hundred and sixty feet of row, allowing six Beans to every foot.

These Beans should not be suffered to get old and tough before they are gathered; be careful in trimming them, to strip off the strings; to effect this desirable object, break them across; and, in order to preserve their greenness, soak them in salted water for a short time, then put them into the water while boiling, which should be previously seasoned with salt. When they are tender, which will be in from fifteen to twenty minutes, take them up, and drain them through a colander, in order to render them capable of absorbing a due share of gravy, melted butter, &c.

BEANS. (Pole or Running.)

HARICOTS A RAMES.

Phaseolus Limensis.

VARIETIES.

Large White Lima.

| Carolins, Lima, or Sky.

Phaseolus Multiflorus.

VARIETIES.

Scarlet Runners

| London Horticultural.

White Dutch Runners.

| French Bicolour.

Dutch Case Knife, or Princess.

| Red Cranberry.

Asparagus, or Yard Long.

| White Cranberry.

These species and varieties of Beans may be planted early in the month of May, and in June, either in hills three feet distant from each other, or in drills about two inches deep, and the beans two or three inches apart in the drills. The poles should be eight or ten feet long, and may be fixed in the ground before the Beans are planted.

The varieties of Lima Beans should not be planted in the open ground until the second week in May, unless the

season be very favourable, and the ground warm. As these Beans are apt to get rotten by cold and damp weather, let six or eight be planted half an inch deep round each pole, and afterwards thinned, leaving three or four good plants in a hill, which hills should be full four feet distance from each other, every way.

The soil for running Beans should be the same as for Dwarfs, except the Lima, which require richer ground than any of the other sorts. A shovelful of rich light compost, mixed with the earth in each hill, would be beneficial.

If any varieties are wanted before the ordinary seasons, they may be planted in flower pots in April, and placed in a greenhouse or garden frame, and being transplanted in May, with the balls of earth entire, will come into bearing ten or fourteen days earlier than those which, in the first instance, are planted in the natural ground.

It will require about a quart of Lima Beans to plant one hundred hills. A quart of the smallest sized Pole Beans will plant three hundred hills and upwards, or about two hundred and fifty feet of row, and the largest runners will go about as far as the Lima Beans.

Lima Beans should be shelled while fresh, and boiled in plenty of water until tender, which generally takes from fifteen to twenty minutes. Some cook the ripe Beans in winter, in which case they should be soaked in soft water for a few hours, and then put into the water cold, and boiled until tender, with a little salt; but salted meat being boiled with them answers the same purpose, and makes them sweeter and more wholesome. The mode of cooking the other sorts, is the same as Kidney Dwarfs.

BEET.

BETTERAVE. *Beta vulgaris*.

VARIETIES.

Early Blood Turnip-rooted.
Early Long Blood.
Extra Dark Blood
Yellow Turnip-rooted.

Early Scarcity.
Mangel Wurtzel.
French Sugar or Amber.
Sir John Sinclair's.

BEETS, in their several varieties, are biennial, and the best blood-coloured are much cultivated for the sake of their roots, which are excellent when cooked, and very suitable for pickling after being boiled tender; they also, when sliced, make a beautiful garnish for the dish, and the young plants are an excellent substitute for Spinach.

The Mangel Wurtzel, Scarcity, and Yellow Turnip Beets, are cultivated for cattle. Domestic animals eat the leaves and roots with great avidity. They are excellent food for swine, and also for milch cows; and possess the quality of making them give a large quantity of the best flavoured milk.

A small bed of the earliest Turnip-rooted, and other esteemed kinds of Beets, may be planted in good rich early ground the first week of April, which being well attended to will produce good roots in June.

Draw drills a foot apart, and about two inches deep; drop the seed along the drills one or two inches from each other, and cover them with the earth. When the plants are up strong, thin them to the distance of six or eight inches from each other in the rows. The ground should be afterwards hoed deep round the plants, and kept free from weeds.

If the planting of Beet seed, for general crops, be delayed until May or June, the roots will be much larger and better than those from the earliest planting, which, from being frequently stunted in growth by the various changes of weather, become tough, stringy, and of unhandsome shape. In case of failing crops, Beet seed planted the first week in July, will sometimes produce large handsome roots, which may be preserved for Winter use.

The most suitable ground for Beets, is that which may have been well manured for previous crops, and would require no fresh manure, provided it be well pulverized.

It is always best to thin Beets while young. If the tops are used as a vegetable, they should not be left too long for this purpose, or they will greatly injure the roots of those that are to stand. Beds that are to stand through the Summer, should be kept clean by repeated hoeings; and the roots intended for Winter use should be taken up in October, or early in November, and stowed away as directed in the calendar for those months.

Allowing Beet seed to be planted on the gardening plan, it will require at the rate of ten pounds for an acre of land, which is two pounds and a half for a rood, and one ounce for every perch, pole, or rod. If cultivated on the field system, one half the quantity of seed will be sufficient, or even less, if sown regular. If it be an object with the gardener to save his seed, he may plant two or three seeds in each spot where a plant is required, and thin them as before directed.

It may be necessary to add, that one pound of Beet seed will measure about two quarts, and as each capsule contains four or five small seeds, thinning out the surplus plants is indispensable to the production of good roots.

BORECOLE, OR KALE.

CHOU FRISE VERT. *Brassica oleracea*, etc.

VARIETIES.

Green Curled, or Scotch.	Jerusalem, or Buda.
Dwarf Brown, or German.	Cesarean Kale.
Purple Fringed.	Thousand-headed Cabbage.

There are several sub-varieties of this genus of plants besides those above specified, most of which have large open heads, with curled wrinkled leaves. The Dwarf Curled, or Finely Fringed sorts, are much cultivated in Europe for the table; and the coarse and tall growing are considered pro-

fitable for cattle. The Thousand-headed Cabbage, and Cesarean Kale, grow from three to five feet high, and branch out from the stem, yielding an abundant supply of leaves and sprouts in the Winter and Spring.

For the garden, these several varieties may be treated in every respect as Winter Cabbages. The seeds may be sown from about the middle of May to the first week in June, and the plants set out in the month of July, in good rich ground. They are never so delicious as when rendered tender by smart frosts; they are valuable plants to cultivate, particularly in the more Southerly States, as they will there be in the greatest perfection during the winter months; they will also, if planted in a gravelly soil, and in a sheltered warm situation, bear the winters of the Western States; and may be kept in great perfection in the Eastern States, if taken up before the frost sets in with much severity, and placed in trenches up to their lower leaves, and then covered with straw or other light covering: the heads may be cut off as they are required for use; and in the spring, the stems being raised up, will produce an abundance of delicious greens.

One ounce of good Borecole seed will produce about four thousand plants, and may be sown in a border four feet by ten, or thereabouts.

BRUSSELS SPROUTS.

CHOU DE BRUXELLES AGETS. *Brassica oleracea*.

This plant frequently grows from three to five feet high, and produces from the stem small heads resembling cabbages in miniature, each being from one to two inches in diameter. The top of the plant resembles the Savoy, when planted late. The sprouts are used as winter greens, and they become very tender when touched with the frost.

The seed may be sown about the middle of May, in the same manner as Borecole, and the plants set out with a

dibble early in July. The subsequent treatment must be in every respect as for Borecole.

Some gardeners, with a view to furnish the New-York markets with greens early in the spring season, when vegetables in general are scarce, cultivate the common Rape, *Brassica Rapa*; it being a good substitute for Brussels Sprouts, which are not always attainable after a hard winter. If Rape seed be sown early in September, the plants will survive an ordinary winter, and produce top shoots or sprouts early; but it is best sown as soon as the ground is susceptible of cultivation in the Spring, say the last week in March. The sprouts should be cut while young, as such greens then command the best prices, and are more palatable than when far advanced in growth.

It may be necessary to add, that in cooking these sprouts, as also Kale, Colewort, and greens in general, they should be put into hot water, seasoned with salt, and kept boiling briskly until tender. If it be an object to preserve their natural colour, put a small lump of pearlash into the water, which also makes the coarser kinds of cabbage more tender in the absence of salted meat.

BROCCOLI.

CHOU BROCOLI. *Brassica oleracea Italica*.

VARIETIES.

Early White.	Large Purple Cape
Early Dwarf Purple.	White Cape, or Cauliflower.
Early Green.	Sulphur Coloured Cape.
Dwarf Brown.	Branching Purple.
Large Late Purple	Large Late Green.

The several varieties of Broccoli and Cauliflower may be justly ranked among the greatest luxuries of the garden. They need only be known in order to be esteemed. The Broccoli produces heads, consisting of a lump of rich seedy pulp like the Cauliflower, only that some are of a green colour, some purple, some brown, &c. and the white kinds

so exactly resemble the true Cauliflower, as to be scarcely distinguished either in colour or taste.

Broccoli is quite plentiful throughout England the greater part of the year, and it is raised with as little trouble as Cabbages are here. The mode of raising the Purple Cape Broccoli is now generally understood in this part of America; but the cultivation of the other kinds has been nearly abandoned, on account of the ill success attending former attempts to bring them to perfection.

In some of the Southern States, where the winters are not more severe than in England, they will stand in the open ground, and continue to produce their fine heads from November to April. In the Eastern, Western, and Middle States, if the seeds of the late kinds be sown in April, and the earlier kinds in May, in the open ground, and treated in the same manner as Cauliflower plants, it would be the most certain method of obtaining large and early flowers; but as only a part of these crops can be expected to come to perfection before the approach of winter, the remainder will have to be taken up, laid in by the roots, and covered with earth up to the lower leaves, in some sheltered situation, to promote the finishing of their growth.

Those who are desirous of obtaining Broccoli and Cauliflower in any quantity, so as to have all the different varieties in succession, should have places erected similar to some of our greenhouses: the back and roof may be made of refuse lumber, which being afterwards covered with fresh stable dung, will keep out the frost. The place allotted for Cape Broccoli and Cauliflower should have a glazed roof to face the south—the sashes must be made to take off in mild weather, but they should be always kept shut in severe cold weather, and covered with mats, or boards, litter, &c., so effectually as to keep out the frost.

The hardy kinds of Broccoli may be preserved without glass, by having shutters provided to slide over the front in extreme cold weather, which may be covered over with fresh stable dung or other litter. If these plants get frozen, it will be necessary to keep the full power of the sun from coming

on them until they be thawed ; this may be done by shaking a little straw on the bed as they lay.

It may, perhaps, be not generally understood, that the sudden transition from cold to heat, is more destructive to vegetables than the cold itself. If plants of any kind get frozen, and cannot be screened from the sudden rays of the sun, they should be well watered as the air gets warm, and before they begin to thaw ; this will draw out the frost, and may be the means of saving the plants.

The proper time for sowing seed of the Purple Cape Broccoli, is from the tenth to the twenty-fourth of May :* those who intend to provide a place for the winter keeping of the other kinds, may sow seeds of the most esteemed varieties at the same time, or in two or three separate sowings, a week apart.

In order to insure good stout plants, let the seed at this season be sown in a moderately shaded border. It is best sown in shallow drills, drawn three or four inches apart, in which case one ounce of seed will occupy a border of about four feet in width by twelve in length, and produce about four thousand strong plants.

In the beginning of July, or when the plants are of sufficient size, they should be transplanted into extraordinary rich ground, which should be brought previously into good condition. This being done, plant them in rows two feet and a half apart, and two feet distance in the rows.

* It has been proved by repeated experiments, that the Purple Cape Broccoli succeeds better in our climate than any other variety ; and, also, that if Broccoli or Cauliflower plants be retarded in growth by extreme heat, they seldom arrive at good perfection. It is, therefore, important that the time of sowing the seed of Cape Broccoli be so regulated as to allow, say six weeks of the summer, for the plants to grow in, previous to their being transplanted, and about seven or eight weeks between then and the commencement of cool autumn weather, which is essential to mature them.

If seed be sown much before the middle of May, or so early that the plants arrive at full growth in the heat of summer, and thereby become stunted, they generally button, instead of forming perfect heads of flowers, and are consequently of no use but for cattle.

In some of the Southern States, late planting of Broccoli and Cauliflower, succeeds better than early, because the winters are calculated to mature these vegetables, from their not being subject to injury by slight frost, in a late stage of their growth.

As soon as they have taken root, give the ground a deep hoeing, and repeat this two or three times in the course of their growth, drawing some earth around their stems.

Some of the Cape Broccoli, if attended to as directed, will come to perfection early in September and in October; the other kinds will produce their heads in regular succession throughout the winter and spring months, according to their different degrees of earliness, provided an artificial climate be provided for them. These, of course, with whatever may remain of the Cape Broccoli, will have to be taken up early in October, and laid in carefully with the roots and stems covered with earth as far as their lower leaves. Those who have not a place provided, may keep a few in frames, or in a light cellar; but every gardener and country gentleman should have suitable places erected for a vegetable that yields such a delicious repast, at a time when other luxuries of the garden are comparatively out of our reach.

CAULIFLOWER.

CHOUFLEUR. *Brassica oleracea botrytis*.

VARIETIES.

Early White	|	Late White.
Hardy Red, or Purple Cauliflower.		

THIS is a first-rate vegetable: to obtain which, great pains must be taken in every stage of its growth, the extremes of heat and cold being very much against it: which circumstance accounts for good Cauliflowers being scarcely attainable in unpropitious seasons, and which the novice falsely attributes to defectiveness of the seed.

To produce early Cauliflower, the seed should be sown between the sixteenth and twenty-fourth of September, in a bed of clean rich earth. In about four or five weeks afterwards, the plants should be pricked out into another bed, at the distance of four inches from each other every way, this bed should be encompassed with garden frames, covered

with glazed sashes, and boards or shutters; the plants should be watered and shaded a few days till they have taken root; they will afterwards require light and air every mild day throughout the winter; but the outsides of the frames must be so lined and secured, and the tops of the beds so covered as to keep out all frost.

The plants should be well attended to until the time of transplanting in the spring; and those who have not hand or bell glasses, so as to enable them to set some out by the latter end of March, should have a frame ready about the last week in February, in order that they may be transplanted to the distance of eight or nine inches apart; this would prevent them from buttoning, or growing up weak; if this be not done, some of the strongest plants should be taken out of the beds and planted in flower pots, which may be afterwards placed in a frame or greenhouse, until the weather be warm and settled, which may be expected soon after the middle of April. They should be then turned out with the balls of earth entire, and transplanted into a bed of the richest earth in the garden, at the distance of two feet and a half from each other every way; the residue may be taken up from the frame the last week in April, or earlier, if the season proves mild, by means of a garden trowel, and transplanted as above.

The plants should be afterwards well cultivated, by hoeing the ground deep around them, and bringing some earth gradually up to their stems, so as to push them forward before the approach of warm weather. When the soil has been drawn up to the plants some little time, fork the ground between the rows lightly over, which will promote their growth. They should be liberally supplied with water in dry weather; those out of flower twice a week, and those in, every other day, which will contribute to their producing very large heads. As the flower heads appear, the larger leaves should be broken down over them, to defend them from the sun and rain, in order that the heads or pulps may be close, and of their natural colour.

Plants from the autumn sowing are generally allowed to succeed best; but good Cauliflowers are sometimes produced from seed sown in a hot-bed towards the end of January, or early in February. Great pains must be taken to have the bed in good condition to receive the seed; when the plants are up, they must have air every mild day, and as they progress in growth, they should have as much air as possible, consistent with their preservation; but the beds must be kept covered up every night, as long as there is any danger of frost. When the plants are three or four inches high, they must be pricked out three or four inches apart into another bed, and by the latter end of April they may be transplanted into the ground, and treated in every respect the same as the other. These plants, if well managed, will succeed very well, and those that do not flower by June, may make good heads in autumn.

In the early part of May, Cauliflower seed may be sown in the open border, in drills, as recommended for Broccoli, and one ounce of seed will produce about four thousand good plants. These plants should be pricked out in June, and transplanted into good ground early in July, to flower in Autumn: those that are not likely to flower by the last of October, should be taken up and provided for in the manner recommended for Broccoli.

Cauliflower, and also Broccoli, should be gathered while the pulp is close and perfect. After having trimmed off some of their outside leaves, let them be boiled in plenty of water seasoned with salt, taking care to skim the pot, and also to ease the cover, so as not to confine the steam. Take them up as soon as the fork will enter the stems easily, which will be in from ten to twenty minutes, according to their size and age; drain them so as to make them susceptible of absorbing a due proportion of gravy, melted butter, &c. This renders them a palatable and dainty dish.

CABBAGE.

CHOU. *Brassica oleracea*, etc.

VARIETIES.

Early May.
 Early Hops
 Early Dwarf Dutch.
 Early York.
 Early Sugarloaf.
 Early Emperor.
 Early Wellington.
 Early Heart-shaped.
 Early London Market
 Early London Battersea.

Late Battersea, or Drumhead.
 Large Bergen, or American.
 Late Flat German.
 Large Green Glazed.
 Large Late Drumhead.
 Red Dutch, for Pickling.
 Green Globe Savoy.
 Large Cape Savoy.
 Green Curled Savoy.
 Turnip-rooted, in varieties.

The early sorts of Spring Cabbage may be raised in various ways. Some sow the seeds between the tenth and twenty-fourth of September, pricked out and managed the same as Cauliflower plants, only that they are more hardy, and may sometimes be kept through the winter, without sashes.

Some prefer sowing the seed in a cold-bed, covered by a garden frame, with sashes. If this frame be placed on a warm border, and kept free from frost, and the seed of the early kinds sown the latter end of January, or early in February, these plants will be better than those raised in the fall; as they will not be so liable to run to seed, and they will be more hardy, and full as early as those raised in hot-beds in the spring.

Or, if a heap of fresh horse manure be deposited on the ground intended for the raising of early plants before the frost sets in—the same may be removed some mild day in January or February, and temporary frames made by driving stakes in the ground, and nailing planks or slabs thereto. The ground being then dug, the seed sown, and covered up with sashes, will soon produce plants in perfection. The frames should be well protected, by placing the manure around them, and covering the tops with mats, boards, &c. as directed for hot-beds in the calendar for February and March.

It is customary with Gardeners about New-York, to raise their plants in hot-beds. In order to do this, the beds

should be prepared, as directed in a future page of this book, (see Index,) so as to be ready to receive the seed by the latter end of February, or early in March. Plants thus produced, as well as those raised as before directed, will be fit to transplant about the middle of April, and should be carefully planted, with a suitable dibble, in good ground, from sixteen inches to two feet apart, according to size and kind: these, by being hoed often, will produce good Cabbages in June. If seeds of the large early kinds be sown in a warm border, early in April, they will produce plants fit to transplant in May, which will make good Cabbages for summer use.

The seed of Red Cabbage may be sown towards the end of April or early in May, and that of Savoy and late Cabbage in general, may be sown at two or three different times, between the tenth and twenty-fifth of May, in fresh rich ground. The young plants will require to be watched at this season of the year, and if they are attacked by insects, recourse must be had to the ingredients recommended in the general directions; these, if used every evening until the plants get strong, will bring them forward for transplanting in the second or third week in July.

The most certain way of raising good strong plants in the summer season, is to sow the seed in a moderately shaded border, in shallow drills drawn three or four inches apart. One ounce of seed sown in this manner, will occupy a border of about four feet in width by twelve in length, and produce about four thousand stout plants; whereas if seed be sown broadcast, as is the usual custom, two ounces of seed may not produce so many good plants, as the one ounce on the plan recommended.

The Bergen, and other large kinds, should be transplanted in rows thirty inches asunder, and the plants about two feet apart in the rows; the Savoy and smaller sorts may be placed from four to six inches nearer every way. Cabbage succeeds best in a fresh rich soil, and the ground should be deeply hoed, at least three times, during their growth.

The *Brassica Rapa*, or Turnip Cabbage, produces its

bulb or protuberance, on the stems above ground, immediately under the leaves. It is eatable when young, or about the size of a garden turnip.

The seed may be sown in April or May, and the plants afterwards treated the same as Cabbage, only that in earthing up the plants, you must be careful not to cover the globular part.

They are much more hardy than Turnips. In England the bulbs often grow to upwards of twenty inches in circumference, and weigh from ten to twelve pounds. They are cultivated for the feeding of cows and sheep, as well as for table use; in either case, they treat them as they do cabbages, or sow them like Turnips, and afterwards hoe them out to proper distances.

The *Brassica Napus*, or Turnip-rooted Cabbage, has an oblong thick root in the form of a Winter Radish; it is extremely hardy, and will survive very hard frosts; the seeds should be sown in rich ground, and treated in every respect as Turnips, observing to thin the plants with a hoe to the distance of sixteen inches apart. Their roots will be much larger and better when treated in this way, than if transplanted.

The *Brassica Napus*, variety *esculenta*, is sometimes cultivated as a salad herb. It is held in great esteem by the French as a culinary vegetable, and is called the Navet, or French Turnip. In France, as well as in Germany, few great dinners are served up without it, in one shape or other.

COLEWORT, OR COLLARDS.

CHOU VERT. *Brassica oleracea*.

This is a species of Cabbage which is eaten when young; it so nearly resembles the early kinds of Cabbage, that it is seldom cultivated. The English frequently sow the seed of early heading kinds of Cabbage, as a substitute, which being done at different seasons, enables them to procure a supply of fresh greens from their gardens every day in the

year. This is not attainable here, on account of the extremes of heat and cold ; but Collards would prove very valuable and acceptable, in the event of an unfavourable season for fall Cabbage.

If the seeds of Early York, Early Dutch, or other early kinds of Cabbage, be sown in June, July and August, and transplanted as they become fit, into good ground, from fifteen to eighteen inches apart, the first planting would make good heads for fall use ; and the plants of late sowings, if transplanted in September and October, in a warm border, would produce tender sweet-eating greens for use in the early part of winter ; the latter plantings may be placed ten or twelve inches, plant from plant. These could be easily sheltered on the approach of severe weather, without being taken up. The cultivation of Collards is well adapted to our Southern States, as they there need no protection in winter.

CARDOONS.

CARDON. *Cynara cardunculus*.

THE Cardoon Artichoke, a native of Candia, is much cultivated in Europe for culinary purposes, such as for salads, soups, stews, &c.

The stems of the leaves being thick and crisp, are the eatable parts, after being blanched. They are in perfection in Autumn and Winter.

The seed may be sown in a bed of rich earth in the month of April ; and one ounce will produce about six hundred plants : when the plants are up strong, they should be thinned to four or five inches distance, to prevent their becoming weak. They may be transplanted in June, at the distance of four feet from one another every way ; observe before planting, to dress their tops and roots the same as Celery. As they advance in growth, they are to be earthed up for blanching, keeping the leaves close together ; this may be done with bass or matting, as practised with Endive ; they are afterwards to be earthed up gradually

from time to time, until whitened to a sufficient height. As winter approaches, Caradoons must be taken up and laid away like Celery, or they may be preserved with sand in a cellar.

CARROT.

CAROTTE. *Daucus carota.*

VARIETIES.

Early Orange.	|	for cattle {	Long Lemon-coloured.
Long Orange.			Blood Red.
Altringham.			Long White.

THE Carrot is a native of Britain, and grows by the road sides, in many parts. As a culinary vegetable it is much used in soups and stews, and forms a dish with boiled beef, &c. The coarse sorts are cultivated as fodder for cows, sheep, oxen, and horses, and are considered profitable, as they frequently yield upwards of four hundred bushels to an acre.

For the garden, the Early Orange should be cultivated for Spring and Summer use; but the Long Orange and Altringham are more suitable for main crops, on account of their bright orange colour, as well as for their great size and length. They grow to great perfection in a rich loamy soil, and may be raised in drills drawn about one inch deep, and twelve inches asunder. A small bed may be planted the latter end of March for an early crop, and from that time to the end of May, for successive crops: but the principal crop should not be sown too soon, as the early plantings are apt to produce seed stalks, and consequently stringy and useless roots.

The most suitable ground for late carrots, is that which has been well manured for previous crops, and requires no fresh manure. If the seed be sown early in June, and the plants thinned out to the distance of five or six inches from each other when young, and kept hoed, they would yield an abundance of fine roots for winter and spring use, by being taken up in Autumn, and preserved either in sand in a cellar,

or graves covered up in a garden, as directed in the calendar for November.

Although Carrot seed is naturally small and light, it seldom fails to vegetate in favourable seasons; it, therefore, need not be sown too thick in ground not apt to produce weeds. If a root could be insured to grow unmolested in every instance where a seed may be deposited, two pounds would be more than sufficient for an acre of land; but gardeners generally use four or five pounds to the acre, in order that the rows may be more easily traced in the event of a luxuriant growth of weeds. To avoid risking an unequal crop in small gardens, half an ounce of seed should be allotted for every pole, perch, or rod, or twenty ounces for a rood of land. On light ground, the use of a roller would be beneficial in dry weather, excess of which is detrimental to the germination of Carrot, as well as of all other light seeds.

CELERY.

CELERI. *Apium graveolens.*

VARIETIES.

White Solid.		New Silver Giant.
Red Coloured Solid.		North's Giant Red.
<i>Celeriac</i> , or Turnip-rooted.		

THIS vegetable, so much esteemed as a salad, is known in its wild state by the name of Smallage; and is found in great abundance by the sides of ditches, and near the sea-coast of Britain. The effects of cultivation are here strikingly exhibited, in producing from a rank, coarse weed, the mild and sweet stalks of the Celery. This circumstance should stimulate the young gardener to aim at improvements in the cultivation of plants in general.

It is customary with some gardeners to raise their early plants in hot-beds; but as plants thus raised are apt to produce seed stalks, it is much safer to cultivate them in cold beds, prepared as directed for the raising of early Cabbage plants. The seed for a general crop may be sown the last

week in March, or early in April, in rich mellow ground, and in a situation where the plants could be protected from the parching heat of a summer sun (a border against a north aspect is the most suitable.) Some sow the seed broadcast, but the plants will be much stouter if raised in drills. The drills may be half an inch deep, and six inches apart, so that a small hoe can be worked between the rows; and if properly attended to, every ounce of seed so sown, will produce ten thousand strong plants or more.

The early sown plants should be pricked out in a nursery bed of rich earth, as soon as they are two or three inches long, there to remain about a month, after which they will be fit to transplant into the trenches.

Choose for this purpose a piece of rich ground, in an open exposure, mark out the trenches by line, ten or twelve inches wide, and allow the space of three feet between them, which will be sufficient for the early plantations: Dig each trench a moderate spade deep, laying the dug out earth equally on each side, between the trenches; put three inches deep of very rotten dung in the bottom of each trench, then pare the sides and dig the dung and parings with an inch or two of the loose mould at the bottom, incorporating all well together, and put in the plants.*

Previous to planting, trim the plants, by cutting off the long straggling leaves, and also the ends of the roots. Let them be planted with a dibble, in single rows, along the middle of each trench, five or six inches between plant and plant; as soon as they are planted, give them a plentiful

* Some gardeners are accustomed to cultivate Celery on the level ground; others, after making their trenches in the usual way, have gone to the expense of carting peculiar soil from a distance, with which they replenished their trenches until nearly full. Those who have pursued the latter plan, say that they were rewarded for their trouble by gathering roots of superior size and quality; but it is doubtful whether it would prove profitable to practice this plan on an extensive scale. It may, however, be judicious in those gardeners whose subsoil, or under stratum, is inferior, or ill adapted for the cultivation of Celery, to cultivate it in shallow drills, or furrows worked out with a plough, by which means they may secure good soil to plant in, and also to earth up with. In such cases the rows must be from four to five feet apart, and frequent ploughing between them would promote the growth of the plants.

watering, and let them be shaded until they strike root and begin to grow.

The main crops may be planted in the same way, but in trenches four feet distant from each other, and an inch or two further from plant to plant; or in beds made in the following manner, which for the ease of preserving the plants in winter, will be found extremely convenient, besides a greater quantity can be raised on a given piece of ground.

Lay out the ground into beds of four feet wide, with alleys between, of three feet; dig the beds a spade deep, throwing the earth on the alleys: when done, lay four or five inches of good well-rotted dung all over the bottom of the beds, dig and incorporate it with the loose earth, and cover the whole with an inch or two of earth from the alleys; plant four rows in each bed at equal distances, and from six to eight inches apart in the rows; after which, give them a plentiful watering, and shade them.

The plants must be hoed occasionally, until grown of sufficient size for earthing, which is done with the assistance of boards, by laying them along the rows, to support the leaves while you are putting in the earth from the alleys, and removing them as you progress in the business.

The earthing should never be done when the plants are wet, as this is apt to make the Celery rusty, but should be performed gradually in fine weather as the plants progress in growth, repeating the earthing every two weeks; at which time care should be taken to gather up all the leaves neatly, and not to bury the hearts of the plants. When they are grown two feet high, and well blanched, they are fit for the table.

As Celery will grow three or four feet high in one season, it will be necessary to delay the planting of that which is intended for winter use until the latter end of July, but the trenches should always be got ready soon enough to avoid a serious drought, which often delays the plantings till too late in the season. The blanching of Celery for winter use may be delayed until October.

By market gardeners who raise Celery on a large scale, the trenches may be worked out with a plough, and finished with a spade or hoe. The ground may be also ploughed between each row of Celery previous to earthing it up; this will save much labour.

The *Celeriac*, or Turnip-rooted, may be planted either on level ground or in shallow drills; the root of it swells like a Turnip, and may be preserved in sand through the winter. The French and Germans cut in slices, and soak it a few hours in vinegar; by such simple preparation, it becomes mellow as a Pine Apple, and affords a delicious and very nourishing repast.

CORN SALAD, OR FETTICUS.

MACHE OU DOUCETTE. *Valeriana locusta*.

VARIETY.—*Olitoria*.

THIS plant grows spontaneously in the cornfields of England, hence it is called Corn Salad, and from its being sufficiently hardy to stand the winter, it has acquired the appellation of Lamb's Lettuce, from its affording an early pasturage. It is cultivated as a salad for winter and early spring use. The seed may be sown in rich clean ground, the latter end of August or early in September.

Some gardeners sow the seed in beds formed four or five feet wide, with paths between each bed, just sufficient to admit of room for hand-weeding; but it will vegetate more freely if sown in drills half an inch deep, provided it be carefully covered. The drills may be about six inches apart just sufficient to admit a small hoe to work between the rows; as if the plants be not cleared of all weeds while young, they will be more plague than profit.

Fetticus must be covered up with straw at the approach of severe weather, to preserve it in good condition for use in the early part of the ensuing spring, as that is the season which most amply remunerates the cultivator.

The seed of *Fetticus* is small and light, but it will admit of being sown thick, say at the rate of from four to six pounds to the acre of land.

CRESS.

CRESSON. *Lepidium sativum*.

VARIETIES.

Curled, or Peppergrass. | Broad-leaved Garden.

CRESS is a small salad herb, and is generally used with Lettuce, White Mustard, Rape, Chervil, &c. It may be sown in little drills very thick, as should Salad seeds in general, and cut before it comes into rough leaf. A small quantity in the salad season, which is Spring and Autumn, may be sown every week in rich ground free from weeds.

CRESS-WATER.

CRESSON DE FONTAINE. *Sisymbrium nasturtium*.

THE Water Cress is a creeping amphibious perennial, and is grown very extensively for the London markets. Loudon says, in his *Encyclopædia of Gardening*, that "The most suitable description of water is a clear stream, not more than an inch and a half deep, running over sand or gravel; the least favourable, deep still water, or a muddy bottom. It is highly advantageous to make the plantations in newly risen spring water, as the plants do not only thrive better in it, but in consequence of its being rarely frozen, they generally continue in vegetation, and in a good state for gathering, through the whole winter season. The plants are disposed in rows parallel with the course of the stream, about eighteen inches apart. When these plants begin to grow in water one inch and a half deep, they soon check the current so as to raise the water to the height of three inches above the plants, which is considered the most favourable

circumstance in which they can be placed. It is absolutely necessary to have a constant current, as where there is any obstruction to the stream, the plants cease to thrive. After they have been cut about three times, they begin to stock, and then the oftener they are cut the better."

CUCUMBER.

CONCOMBRE. *Cucumis sativus*, etc.

VARIETIES.

Early Frame.	Long Green Southgate.
Early Green Cluster.	Long green Turkey.
Early Green Table.	Long White Turkey.
Long Prickly.	White Spined.
Short Prickly.	West India, or Gherkin.

THE *Cucumis sativus*, or common Cucumber, is a native of the East Indies, and of nearly as great antiquity as the vine. It was introduced into England in 1573, and is extensively cultivated in forcing frames, and in the open air. In March, they are sold in the London markets for a guinea a dozen; and in August and September, for one penny per dozen.

As Cucumbers are much used in New-York, it should be an object with gardeners to have them in the market early; directions for raising them out of the ordinary season, are therefore given in a future page, under the head forcing vegetables, to which the reader is referred. Cucumbers may be raised in the open ground, by planting seed the first week of May, in hills four feet apart; or if the ground be light, basins formed an inch below the level of the surface would be beneficial.* Previous to planting, the ground should be prepared by incorporating a shovelful of rotten dung, with the earth in each hill, after which four or five seeds may be planted half an inch deep. One ounce

* The term hill is frequently made use of by gardeners and farmers, to designate a situation allotted for a given number of seeds, whereas, such seeds are more frequently deposited below the level of the surface than above it; yet, as the plants progress in growth, hills are frequently formed around them. which makes the term applicable, or rather reconciles the apparent contradiction.

of good sound seed is sufficient for two hundred hills and upwards.

Cucumbers are liable to be attacked by a yellow fly, which sometimes devours young plants; these and other insects may be killed by sowing tobacco dust, soot, powdered charcoal, and the like, round about the vines when they first come up. After this is done, the plants may be thinned to two or three in a hill, and the ground carefully hoed, drawing a little earth round them at the same time. The vines should be kept free from weeds, and if the weather proves dry, a gentle watering now and then, given in the evening, will be of considerable service.

Picklers may be raised by planting the seed at any time in July. When the vines begin to bear, they should be looked over, and the fruit gathered as fast as it becomes fit, as the plant will cease to bear much, if the fruit be permitted to get yellow.

CHIVES, OR CIVES.

CIVETTE. *Allium schænoprasum*.

THIS is a small species of Onion, growing in large tufts; they are propagated by offsets from the roots, and may be planted either in Spring or Autumn, in rows ten or twelve inches apart, and the bulbs three or four inches apart in the rows; they will soon take root, and increase very fast into large bunches of bulbs. They make handsome edging to beds or borders.

EGG-PLANT.

MELONGENE OU AUBERGINE. *Solanum melongena*.

VARIETIES.

Purple, for cooking. | White, for ornament.

Seed of the Purple Egg-plant may be sown in a hot-bed about the first of March, and the sashes kept down close until the plants come up, after which a little air may

be given in the heat of the day.* Towards the middle of May, if settled warm weather, the plants should be set out from twenty-four to thirty inches apart, in a rich warm piece of ground, and if kept clean, and a little earth be drawn up to their stems, when about a foot high, they will produce plenty of fruit.

Plants of the white variety may be raised in the same manner, and transplanted into pots in May; or if some of the seed be sown in a warm situation the first week in May, these may come to perfection in the course of the summer. This variety, though generally cultivated for ornament, is good when cooked.

As Egg Plants will not grow in the open ground until settled warm weather, and are apt to perish from being transplanted too early, the gardener should be provided with small pots, in order that the plants may be transplanted therein early in May, and placed in a frame, there to remain until the first week in June, at which time if they are turned out and planted, with the balls of earth entire, they will soon take root and grow freely.

Select the fruit when at maturity; cut it into slices, and parboil it in a stewpan; when softened, drain off the water; it may then be fried in batter made with wheaten flour and an egg, or in fresh butter with bread grated fine, seasoned before it is put in the pan, with pepper, salt, thyme, and such other herbs as may best suit the palate. Some use Marjoram, Summer Savory, Parsley, Onion, &c.

* Egg-Plant seed will not vegetate freely without substantial heat; but with proper management, upwards of four thousand plants may be raised from an ounce of seed. If these plants get the least chilled in progress of growth, they seldom recover; it is, therefore, important that the frame allotted for them, be placed over a well-regulated hot-bed, and partitioned off, so that the sash can be kept down over the plants in cool weather.

Some Gardeners raise Egg-plants in the same frame with Cabbage and such other half hardy plants as require air every mild day; by such management, one or the other must suffer for want of suitable aliment—Heat being the principal food of tender plants, and Air that of the more hardy species.

ENDIVE, OR SUCCORY.

CHICOREE DES JARDINS. *Oichorium endiva*, etc.

VARIETIES.

Green Curled
White Curled.

Golden Yellow.
Broad-leaved Batavian.

THE *Cichorium endiva* is a native of China and Japan, and is much used in salads and stews, and as a garnish for the table.

The proper kind of seed for early sowing, is the Green Curled. A small quantity of this may be sown at different times in April and May, for those who would have it early. These crops will be very apt to run to seed; for this reason, it will be best to delay the sowings of seed for general crops until June or July. If a small quantity of each esteemed variety be sown two or three times in these months, they will produce a plentiful supply for use in Autumn and the early part of Winter. One ounce of good Endive seed will produce about 5000 plants.

When the plants are three or four inches high, they should be transplanted into good ground, to the distance of a foot from each other, and immediately watered; or if they are set out in cloudy or wet weather, it will save this trouble. The plants will require to be hoed and attended to in the same manner as Lettuce, until grown to a moderate size, when they must be blanched. Select the large and full-hearted plants, and with bass or other strings, tie them a little above the middle, not too tight, previously gathering up the leaves regularly in the hand. This must be done when the leaves are very dry, otherwise the plants would rot. The *Cichorium intybus* grows spontaneously in many parts of Europe and America. In France it is much cultivated; the tops of the plants are considered profitable for cattle, and the roots are taken up in Autumn, and dried. The aromatic and volatile qualities of coffee are, by the combination of this root, rendered more mellow and full upon the palate, and its fragrance greatly increased, producing an agreeable tonic, and most exhilarating beverage.

Sow the seed in April in drills half an inch deep, and about eighteen inches apart; thin out to six or eight inches in the row. The plant produces beautiful blue flowers, and is worthy of a place in the flower garden. The roots, when dried, roasted as coffee, and ground, may be mixed in the proportion of two ounces of the powder with a pound of coffee.

HORSE-RADISH.

RAIFORT. *Cochlearia armoracia.*

THIS plant is propagated by cuttings from the root, either cut from the top about two inches long, or by offsets, or otherwise useless parts, from the sides of the main root, retaining the crowns or top shoots in as many parts as possible. These should be planted as early in the spring as practicable, in rows two feet apart, and six or eight inches from each other in the rows.

Select for the bed a good depth of soil, and such as will retain moisture, manure it with good rotten dung, plough or dig it deep, and with a drilling machine or other convenient implement, draw drills a foot apart—then plant with a dibble, cuttings as above described, in every alternate drill, from two to three inches deep. The intermediate drills may be planted with Beet or Carrot seed, or that of any other root, but Turnip Beets are the most suitable to cultivate between the rows, as they will grow quick, and can be pulled out, without disturbing the Horse Radish.

The Beets must of course be thinned out while young, and kept cultivated by hoeing between the rows, which will also benefit the Horse-Radish. After the Beets are pulled, hoe the ground again, and keep it clear of weeds, by which method the bed may be cleared every year.

Some cultivate Horse-Radish in a permanent bed, in which case, if in taking up the roots some offsets be left in the ground, they will produce a successive supply for future years.

INDIAN CORN.

MAIS. *Zea mayz.*

VARIETIES.

Early Dutton.	} Best for the table.		Cobbet's Early Normandy.
Early Tuscarora.			Southern Horsetooth.
Early Canadian.			Early Golden Sioux
Sweet, or Sugar.			Mottled, and Curious Pearl.

THE different varieties of Early Corn intended for boiling when young, or others as curiosities, may be planted in the garden the last week in April, or early in May, in hills four feet apart, or in drills. If some of each esteemed variety be planted in separate beds at the same time, they will come in for the table one after the other in regular succession. After this, if any particular variety be preferred, it may be planted at different plantings in the months of May and June. If the ground be poor, mix a shovelful of old manure with the earth in each hill before the seeds are planted, and after the plants are up strong, scatter a tea-cup full of wood ashes around each hill. This, with attentive hoeing and hilling, will cause it to produce ears early. Deep digging between the hills is very beneficial when the corn is about eighteen inches high.

JERUSALEM ARTICHOKE.

POMME DE TERRE. *Helianthus tuberosum.*

THIS plant is a native of America. The tubers of the root which are generally abundant, were, before potatoes became improved by cultivation, in great esteem, and are yet considered a fine flavoured and nutritious food, when boiled and mashed with butter. They may be easily propagated by cutting the roots into sets, with two eyes in each, and planting them in the same manner as potatoes, in March and April. To have them in perfection, they should be hoed frequently, and the ground kept loose around them. In digging them for use, care should be taken to gather them out clean, as the least particle being left will grow the year following, and encumber the ground, without producing a crop worth standing.

LEEK.

POIRREAU. *Allium porrum.*

VARIETIES.

Scotch, or Flag

Large London.

THIS is a wholesome and useful herb, and is so hardy as to endure the extremes of heat and cold without injury. The seed may be sown in March, or early in April, on a bed of rich earth, in drills about an inch deep, and of a sufficient distance apart to admit of a small hoe working between the rows, allowing one ounce of seed for every three thousand plants that may be required.

If the ground be kept loose and clean around the plants, they will be fit to transplant in June, or early in July, and should be set out in good ground, in rows twelve inches asunder, and the plants five or six inches apart in the rows. They will grow well in a warm border, which at this season is useless for many kinds of vegetables. After the plants have taken root, they should be frequently hoed, and kept free from weeds.

Those who wish to have leeks blanched, may plant them in trenches three or four inches deep, and as the plants progress in growth, the earth should be drawn by a hoe into the trenches.

LETTUCE.

LAI TUE. *Lactuca sativa crisp.*

VARIETIES.

Large Green head.
Butch, or Cabbage.
Tennis Ball, or Rose.
Madeira, or Passion.
Large Green Curled.
Egyptian Green Coss.

}
These are handy
kinds.

Early Silesia.
Imperial, or Sugar Loaf.
Pale Green, or Butter.
Grand Admiral.
Large Summer Silesia.
Brighton, or Loaf Coss.

It would be easy to furnish a more extensive catalogue of Lettuce, as the varieties are numerous; but as this is one of those kinds of vegetables that can only be raised in per-

fection during mild and temperate weather, it is needless for the gardener to plant any in the open ground, but such as have been tested, and found to stand a tolerable share of warm weather, which generally prevails in May and June, and consequently cuts short the Salad season. Those who have been accustomed to raise Head Lettuce in any quantity, know the trouble of preparing and planting the ground, and the loss they would sustain, if several thousand of plants run up to seed just as they appeared to be perfecting for market. As this is often the case, even with the very best attention, I would caution gardeners to test such plants as they are not acquainted with, before they set out any quantity with a view to their heading.

The six varieties inserted in the first column of our catalogue, have been known to stand our Winters, and may be sown from the first to the middle of September, in rich ground free from weeds; they answer very well sown with Spinach, and should be covered over with straw at the approach of severe weather. These plants, if transplanted into warm borders, or in the open ground, as early in March as the weather permits, will produce fine heads early in the month of May.

The best of the tender kinds of Lettuce should be sown in moderate hot-beds early in March, which being transplanted into good ground by the middle of April, will produce their heads before the approach of warm weather. Such kinds as are known to produce heads in hot weather, and also such as may be required to cut as a small Salad while young, may be sown in warm borders in March and April, but those intended for heading should be transplanted as soon as they are an inch or two in height, and kept in a growing state by frequent hoeing, or they may run up to seed as the season advances.

If it be an object with the gardener to have good strong Lettuce plants for transplanting, the seed should be sown very thin. One ounce of good seed is sufficient for a border of six feet in width by eighteen feet in length, and will produce from ten to twelve thousand plants.

All kinds of Lettuce intended for heading, should be planted in good ground twelve inches distant from each other every way ; the plants should be carefully hoed every other week, during their growth ; the first hoeing should be done in about two weeks after they are transplanted.

The Coss Lettuce requires to be blanched ; this is done by gathering up the leaves of the plants, and tying bass round them when grown to perfection.

If Head Lettuce be required at other seasons than the Spring, it may be obtained in Autumn by sowing seed in August, or in the Winter, by means of garden frames and glazed sashes. See article on forcing vegetables.

MELON.

MELON. *Cucumis melo.*

VARIETIES.

Green Citron.	} Green fleshed	Large Yellow Cantelupe.
Murray's Pine Apple.		Minorea, or Netted do.
Persian.		Pomegranate, or Musk Scented.
Nutmeg.		Skillman's, or Netted Romane.
Star, Fine Late.		Snake, (curious.)

THE Melon is an exotic plant, growing wild in Asia. It is cultivated in all the warm countries of Europe, and also in Africa and America, where its salubrious and cooling fruit is greatly esteemed.

For the varieties of the Musk or Cantelupe Melons, prepare a piece of rich ground the first week in May ; manure it and give it a good digging ; then mark it out into squares of six feet every way ; at the angle of every square, dig a hole twelve inches deep and eighteen over, into which put about six inches deep of old rotten dung ; throw thereon about four inches of earth, and mix the dung and earth well with the spade ; after which draw more earth over the mixture, so as to form a circular hill about a foot broad at top. For a definition of the term "hill," see article Cucumber. When your hills are all prepared, plant in each towards the centre, six or eight grains of seed, distant two inches from one another, and cover them about half an inch deep. One

ounce of good Melon seed will plant about one hundred and twenty hills.

When the plants are in a state of forwardness, producing their rough leaves, they must be thinned to two or three in each hill; draw earth from time to time round the hills, and as high about the roots of the plants as the seed leaves. As soon as the plants spread into branches, they should be stopped, by pinching off the top of the first runner bud; this will strengthen the plants and promote their perfecting the fruit early; after which keep the ground perfectly free from weeds by frequent hoeings.

There are many varieties of the Melon, highly estimated in Europe, which do not succeed in this country; the gardener should, therefore, plant only such as have been tested and found to produce good fruit here, or our superior old sorts may become degenerate. After a judicious selection is made, if caution be not used to plant the different sorts remote from each other, also from cucumbers, squashes, and gourds, degeneracy will infallibly be the consequence. To prevent the ravages of flies, &c. see General Remarks.

WATER MELON.

MELON D'EAU. *Cucurbita citrullus*.

VARIETIES.

Long Island.
Carolina.

Apple seeded.
Citron, for preserves.

Goodwin's Scarlet Imperial.

THE Water Melon, though by some considered a species of the former, is a distinct genus of exotic plants. They afford a very refreshing article of luxury in our warm summers. Dr. Pallas, in the account of his journey to the southern provinces in Russia, in 1793 and 94, speaking of a colony of Moravians at Sarepta, or Sapa, on the river Volga, says, "The ingenious inhabitants of this town brew a kind of beer from their very abundant and cheap Water Melons, with the addition of Hops; they also prepare a conserve or

marmalade from this fruit, which is a good substitute for syrup or treacle."

In order to have Water Melons in good perfection, you must fix upon a piece of very rich light soil; prepare, plant and manage it in every respect as is directed for the others, only let the hills be seven or eight feet distant every way. One ounce of seed will plant from forty to fifty hills.

MUSTARD.

MOUTARDE. *Sinapis.*

VARIETIES.

White.

|

Black.

THE *Alba*, or White Mustard, grows spontaneously in the fields of England; it is also cultivated as a small Salad, as well as for seed. The seed yields from every hundred pounds, from thirty-three to thirty-six pounds of sweet mild oil.

White Mustard Seed is much used as a medicine, and persons subject to disordered stomachs often derive great benefit by taking a spoonful of the dry seed, two or three times a day. Some use it in pickles, to which it imparts an agreeable flavour, and renders Cucumbers in particular more salutary.

The *Nigra*, or Common Mustard, is also a native of England. The condiment, called Mustard, and in daily use at our table, is prepared from the seed of this species.

The seeds of each variety may be sown in clean rich ground in April and May; and for a fall Salad in September, in shallow drills.

NASTURTIIUM.

CAPUCINE. *Tropæolum.*

THIS is an annual plant, a native of Peru, and is highly deserving of cultivation for the sake of its brilliant orange and crimson coloured flowers, as well as for the berries, which, if gathered while green and pickled in vinegar, make a good substitute for capers, and are used in melted butter, with boiled mutton, &c.

The seeds should be sown in April, or early in May, in drills about an inch deep, near fences or pales; or trellises should be fixed on which they can climb and have support, for they will always be more productive in this way than when suffered to trail on the ground.

OKRA.

GOMBO. *Hibiscus esculentus.*

THE green capsules of this plant are used in soups, stews, &c., to which they impart a rich flavour, and are considered nutritious. Its ripe seeds, if burnt and ground like coffee, can scarcely be distinguished therefrom.

The seed should be planted in good rich ground, the first or second week in May, if settled warm weather, but not otherwise, as it is a very tender vegetable. Draw drills about an inch deep, and three or four feet asunder, into which drop the seeds at the distance of six or eight inches from one another, or rather drop two or three in each place, lest the one should not grow, and cover them nearly an inch deep; as the plants advance in growth, thin them out, earth them up two or three times, and they will produce abundantly.

ONION.

OIGNON. *Allium cepa*, etc. etc.

VARIETIES.

White Portugal.
Silver Skinned.
Deptford Red.

Yellow Dutch.
Strasburgh, or Flanders.
Madeira, (imported.)

OF the several varieties of Onions, the Yellow or Silver Skinned, and Deptford Red, are the best for a general crop. The bulbs are handsome, of firm growth, and keep well through the Winter. The white Portugal are handsome for the table, very suitable for pickling; also to pull while young: and generally prove a very profitable crop.

Previous to sowing Onion seed for a general crop, the ground should be well prepared by digging in some of the oldest and strongest manure that can be got. The earlier this be done in the Spring, the better; and the planting should not be delayed longer than the middle of April. The seed may be sown moderately thick in drills one inch deep, and twelve inches apart.

Those who cultivate Onions for the sake of their bulbs, may use at the rate of four or five pounds of seed per acre.

As market gardeners, in the vicinity of large cities, find it most profitable to pull a great proportion of their Onions while young, they generally require at the rate of from eight to ten pounds of seed to an acre of land.

When the plants are up strong, they should be hoed. Those beds that are to stand for ripening, should be thinned out while young, to the distance of two or three inches from each other; if a few should be required for use after this, those can be taken which incline more to tops than roots, and if the beds be frequently looked over, and the small and stalky plants taken away where they stand thickest, the remaining bulbs will grow to a larger size. The plants should be hoed at least three times in the early part of their growth; but if the season prove damp, and weeds vegetate luxuriantly, they must be removed by the hand, because, after the Onions have begun to bulb, it would be improper to stir them with a hoe.

When the greenness is gone out of the tops of Onions, it is time to take them up, for from this time the fibrous roots decay. After they are pulled, they should be laid out to dry, and when dry, removed to a place of shelter.

The small Onions may be planted in the Spring following : even an Onion which is partly rotten will produce good bulbs, if the seed stems be taken off as soon as they appear.

The *Allium fistulosum*, or Welsh Onions, are cultivated for Spring salad ; they form no bulbs, but are very hardy. If the seed be sown early in September in rich ground, although the crops may die down in the Winter, yet the roots will continue sound, and put up new leaves early in the Spring.

The *Allium cepa*, or common White and Red Onions, are most generally cultivated by market gardeners as a substitute for the *Allium fistulosum* ; they sow the seed in the Spring and Autumn months, the product of which is pulled and sent to market while young, and generally meets a ready sale.

The *Allium proliferum*, or Tree Onion, is propagated by planting the bulbs in Spring or Autumn, either the root bulbs, or those produced on the top of the stalks ; the latter, if planted in the Spring, will produce fine Onions. These may be planted in rows with a dibble, the same as Shallots.

The Potatoe Onion is of late introduction into this country. It does not produce seed as other Onions, but it increases by the root. One single Onion, slightly covered, will produce six or seven in a clump, partly under ground.

The bulbs are generally planted in the Spring, from twelve to eighteen inches apart, but they will survive the Winter, and yield better by being planted in Autumn, if slightly covered with dung, litter, or leaves of trees.

PARSLEY.**PERSIL.** *Apium petroselinum.***VARIETIES.**

Dwarf Curled.	Hardy Siberian.
Extra Curled.	Large Rooted Hamburg.
Single or Common.	Large Rooted Naples.

PARSLEY is a hardy biennial plant, and grows wild in moist climates, but has been greatly improved by cultivation. The leaves of Common Parsley are used as a pot herb, and those of the Extra Curled kinds make a fine garnish. The Large Rooted are generally cooked for the table in Autumn and Winter, like Parsnips.

As Parsley seed, sown late in the season, is apt to lay in the ground some time before it vegetates, and often fails in dry weather, the general crop should be sown by the early part of April, in drills an inch deep, and one foot asunder, allowing at the rate of about six or seven pounds of seed to the acre, or two ounces for every three perches of land. After the plants are up, let them be kept clean by frequent hoeings. The Large Rooted Parsley should be thinned out while young, and managed the same as Carrots and Parsnips.

In order to have Parsley green through the Winter, the old leaves should be picked off in September. If some of the roots be taken up early in November, and laid in a frame, or light cellar, the leaves will keep green a long time; the remainder may be covered up with straw in the place where it grows.

If some Parsley seed be sown in frames in Spring or Summer, it may be preserved for Winter use without the trouble of removing it.

PARSNIP.

PARAIS. *Pastinaca sativa*.

VARIETIES.

Long Guernsey Cup.

| Large Dutch, or Common.

THIS is a hardy biennial plant, common in calcareous soils; it has long been an inmate of the garden, and forms a vegetable dish in the Winter, with salt meat, salted fish, &c.

Parsnip seed may be planted from the middle of March to the last week in April, in drills one inch deep and fourteen inches apart; and as this vegetable requires the whole season to grow in, the sooner the seed is planted the better. Parsnips grow best in a deep soil, manured well the preceding fall. Sow the seeds thick along the drills, at the rate of five or six pounds per acre, and rake them in evenly. *

When the plants are two or three inches high, thin them to the distance of six or eight inches in the rows. They should be kept free from weeds, by regular hoeings through the Summer, and in Autumn they will be fit for use; but they improve in flavour after having been frozen, and will endure the severity of a hard Winter. See calendar for November.

Parsnips require from thirty to forty minutes boiling, according to their size and age. Some boil them in water, seasoned with salt, until tender; but they are better when boiled with salt pork, and afterwards mashed and fried in butter.

* This plant, although when in full growth will endure the extremes of heat and cold, it requires peculiar management to promote and preserve germination in an early stage of culture. In order to give the seed a fair chance, it should be planted in such ground as is susceptible of moisture, and that is not apt to incrust when dry. The seed should be dropped thick along the drills, and well covered—as single or solitary plants are apt to perish, from not having sufficient strength to open the pores of the earth, and in the event of drought such plants die off prematurely. If cultivated in light or dry ground, the same should be rolled or pressed immediately after depositing the seed therein, to preserve moisture.

PEPPER.

POIVRE OU PIMENT. *Capsicum*.

VARIETIES.

Grössum, or Bell Pepper.

Tomato shaped, or Squash.

Sweet Spanish ; used as a Salad, has a very delicate taste.

Long Red, or Bird's Bill.

Cherry, or West Indian.

THIS family of plants are natives of the East and West Indies ; some of their capsules, or pods, are yellow, and others red, when at maturity ; they are much used for pickling, and should be gathered for that purpose before they are fully ripe.

The seeds of the different kinds of *Capsicums* may be sown in a hot-bed in March, or on a warm border, early in May. One ounce of seed will produce about three thousand plants. When the plants arrive at the height of from one to two inches, they should be transplanted into good rich ground, from eighteen inches to two feet distant from each other.

Those who do not want Peppers early in the season, may sow some seed in the open ground in May, in drills two feet asunder, and half an inch deep. When the plants are grown an inch or two high, thin them to the distance of fifteen or eighteen inches in the rows. The ground should be afterwards hoed deep round the plants, and kept free from weeds by repeated hoeings.

The *Capsicum Grossum*, or Bell Pepper, is perennial, and will keep in perpetual bearing in warm climates. In England this species is considered superior to all others, on account of its skin being thick, and also pulpy and tender ; the plants are therefore frequently preserved in hot-houses during the Winter and Spring, and kept in the open air in settled warm weather.

PEAS.

POIS. *Pisum sativum.*

VARIETIES.

Bishop's Early Dwarf, 1 foot.	Dwarf Blue, Prussian, 2 1-2 feet.
Early Washington, 3 feet.	Dwarf Marrowfat, 3 1-2 feet.
Early Frame, 2 1-2.	Ladies' Finger Marrows, 4 feet.
Early Charlton, 3 feet.	Matchless Marrowfat, 6 feet.
Double Blossom Frame, 3 feet.	Knight's Tall Marrow, 6 feet.
Dwarf Prolific, or Strawberry, 2 feet.	Knight's Dwarf Marrow, 3 feet.
Dwarf Spanish, or Fan, 1 foot.	Woodford's Green Prolific, 6 feet.
Early Nimble Dick, 3 1-2 feet.	Large Grey Rouncival, 4 feet.
Early Warwick, 3 feet.	Dwarf Sugar (eatable pods) 3 feet.
Dwarf Blue, Imperial, 2 feet.	Tall Crooked Pod Sugar, 6 feet.
Waterloo Blue, 4 feet.	French Bouquet, or Sugar, 3 1-2 ft.
Groom's Dwarf Blue Prolific, 4 feet.	Albany Field, in varieties.

THE above list and description of the most esteemed kinds of Peas, are taken from the catalogue of Mr. G. C. Thorburn. If they are rightly described, they will grow to different heights, according to soil and season. This description, however, may serve as a guide for the gardener in planting. The dwarf Peas require less distance between row and row, and shorter sticks than the tall kinds.

Planting the early kinds of Peas should commence as soon in the Spring as the ground can be brought into good condition; all the other sorts, as well as the early, will answer for successive crops; to obtain which, a few of the most esteemed varieties should be planted at the same time every two weeks, from March until the end of May. Persons desirous of having Peas throughout the Summer and Autumn may plant a few in June, July and August. The Peas should be then soaked in soft water, five or six hours before planting, and if the ground be dry, it should be watered in the drills.

Gardeners practice different modes of planting Peas, some plant them in ridges, others in drills, some in single rows, others in double, some use sticks for the dwarf kinds, and others not; those who study neatness should, however, have them all rodded, though the most dwarfish may do without.

All the different sorts of Peas may be planted in double or single rows, from four to six feet apart, according to the

Different heights they may be expected to grow. If two drills be made three inches deep, and about nine inches apart, and the seed dropped along each drill moderately thick, they will yield better than single rows, and will save sticks. When the plants are two or three inches high, let them be hoed, drawing at the same time a little earth up to their stems; when they get to double that height, let them be hoed again, at the same time place a row of sticks in the middle of your double rows, and a few shorter and smaller ones on the outside of each row, to assist the Peas in climbing to their main support. You must be governed as to the length of your sticks by the description of your Peas. There is great advantage in having sticks of a suitable height to the various kinds of Peas; the sticks should not only be sufficiently tall, but also branchy, that the plants may readily take hold; and they should be prepared fan fashion, so that the side branches may extend only along the rows. As the plants progress in growth, let them be repeatedly hoed and earthed up; this will promote a plentiful bearing.

One quart of Peas will plant from one hundred and fifty to two hundred feet of row, allowing the largest kinds to average one inch apart, and the smallest, two peas to the inch.

To have green peas in perfection, they should be gathered while young, and cooked immediately after they are shelled, or they will soon lose their colour and sweetness. Let the water be seasoned with salt, and boiled; then put in the Peas with a small bunch of Spear Mint, and ease the cover so as to let off the steam; they require about fifteen minutes boiling, or five minutes more or less, according to the age and care bestowed. Taste and try in time, so as to have them done to a nicety.

The Sugar Peas have no inner tough film, or skin, to the pods, like the common sorts; they should therefore be boiled without shelling, and served up the same as Kidney Beans.

POTATOES.

POMME DE TERRE. *Solanum tuberosum.*

THE Potatoe is known to be a native of the Southern parts of America, but has been greatly improved by cultivation.

The varieties being very numerous, it is unnecessary for me to point out any particular kinds; some of the earliest should, however, be planted first in the spring, to produce young Potatoes in due season, but they are not so suitable for a full crop as the late varieties.

Potatoes being of such extensive utility, various expedients have been contrived with a view to find out the best method of preparing the seed. In many parts of England, (where Potatoes equal to any in the world are raised,) the farmers seldom plant them whole; they take the Potatoes as they come to hand, and in cutting them take care to have two good eyes in each set; the small Potatoes are deprived of the sprout or nose end, as it is generally considered that a redundancy of eyes exhausts the set, and produces weak plants, which are not calculated to yield a full crop. I have frequently known from five to six hundred bushels raised from an acre with small Potatoes alone cut in this way. Some prefer planting the sets immediately after they are cut; the better way is to get them cut a week before the time of planting, and to lay them out on a barn, or garret floor, to dry.

It will require from twelve to sixteen bushels of Potatoes to plant an acre of ground, according to the size and nature of the seed roots, the manner of preparing, and mode of planting the same.

Potatoes may be planted from the first week in April until July, either in hills or drills; the best way for a garden is to plant them in drills four or five inches deep, and about thirty inches asunder; the sets may be dropped six or eight inches apart; and if a small quantity of combmaker's horn shavings or sea weed, be used as a manure for the early kinds, it will expedite their growth; the ground should be hoed as soon as the plants come up, and as they progress in growth, it will be proper to mould or earth them up twice.

POTATOE, SWEET.

POMME DE TERRE DOUCE. *Convolvulus batatas.*

SWEET Potatoes are grown to great perfection in the Southern States, and may be raised in the vicinity of New-York, by means of a moderate hot-bed, in which they should be planted whole, early in April, three or four inches deep, and about the same distance apart. In about a month they will throw up sprouts. When these are three inches above ground, part them off from the Potatoe, which, if suffered to remain, will produce more sprouts for a successive planting; transplant them into rich light soil, in rows four feet apart, and the plants about a foot apart, in the rows, or in hills four feet apart. Keep them clear of weeds, until the vines begin to cover the ground, after which they will grow freely. In sandy ground, it is well to put a shovelful of rotten manure to each plant.

A moderate hot-bed, five feet square, put down early in the month of April, with half a peck of good sound Sweet Potatoes placed therein, will produce a succession of sprouts in May and June, which if planted and managed as directed, will yield about fifteen bushels of good roots.

PUMPKIN.

CITROUILLE OU POTIRON. *Cucurbita pepo.*

VARIETIES.

Finest Yellow Family.	Connecticut Field.
Large Cheese.	White Bell.
Mammoth, or Spanish.	Seven Years, or Long-keeping.

THIS plant is highly deserving cultivation, particularly in new settlements; the large sorts are profitable for cattle, as some of the mammoth tribe have been known to weigh upwards of two hundred pounds each; the other kinds are also very productive, and may be raised on any waste land, provided it will admit of digging small spots, of a foot or two dimensions, every ten or twelve feet, for the hills, and

that the residue of the ground be unencumbered for the plants to run on. They are generally raised on cultivated farms, between hills of Indian Corn, and may be planted in the garden or open field, in May or June, in hills eight or ten feet apart, with three or four seeds in each hill.

One quart of Field Pumpkin Seed will plant from five to six hundred hills. An ounce of the finer kinds will plant from fifty to eighty hills.

Pumpkins are not so tenacious of a particular soil as either Melons or Cucumbers, but, in other respects, are cultivated in the same manner, only that in raising them on a large scale, the ground may be prepared with a plough, and also afterwards, as the weeds advance, the plough and harrow may be used between the plants until they begin to run, which will save much labour.

The finest quality Pumpkins are known to make good pies, and may also, after being boiled, be worked up with wheaten flour into bread, for which purpose they are fully equal to Indian meal. The knowledge of this fact may prove advantageous to farmers living at a distance from cities, as they may find a market for their grain or meal easier than for their Pumpkins.

RADISH.

RADIS OU RAVE. *Raphanus sativus.*

VARIETIES.

Long Scarlet.
Long Purple.
Scarlet Pear shape.
Scarlet Turnip.
White Turnip Rooted.

Long White Naples.
Purple Turnip.
Yellow Turnip.
White Spanish.
Black Spanish.

} Best for summer.

THE different varieties of Radishes are extensively cultivated near large cities, chiefly for their roots, which are considered a luxury after a hard Winter, and prove acceptable as the warm weather approaches, provided they can be obtained in perfection. The plant is also cultivated for the sake of the seed leaves, which are used as a small Salad;

and even the seed pods, if pickled while young and green, are by some considered a good substitute for Capers.

Those who may be desirous of having good Radishes early in the Spring, should have a warm border prepared in the very best manner, so as to be ready to sow some of the Short Top Scarlet by the middle of March. If the ground should not be in good condition to receive the seed at this time, let it be delayed a few days, and by the first of April, take care to have another bed prepared in the open ground, by digging in some good strong manure. The seed may be sown broadcast, and raked in evenly, or in drills drawn about one inch deep, and a foot apart.

If you wish to have Radishes in regular succession, sow seeds of the most esteemed varieties every two weeks, until the middle of May: if any be sown after this, it should be the sorts described in the second column of our catalogue. These will endure the heat better than the others, and may be sown in drills, in small quantities, throughout the Summer, until the latter end of August, when all the varieties may be sown in regular succession until the first of October. Market gardeners may prepare the ground with a plough, and cover such seed as may be sown broadcast with a harrow.

For early Spring crops the seed may be sown at the rate of from twelve to fourteen pounds to the acre, broadcast; and about half the quantity may be sufficient, in drills drawn a foot apart. Of the large late kinds, five pounds to the acre will be enough, if sown regularly in drills as directed.

It may be necessary here to remind the gardener of the necessity of sowing tobacco dust, soot or ashes, &c. over his seed beds, in hot dry weather, or he will find it difficult to raise Radishes in unpropitious seasons.—See article Turnip, also the General Remarks.

ROCAMBOLE.

AIL D'ESPAGNE. *Allium scorodoprasum*.

THIS and the *Allium sativum*, or common Garlic, is raised in some gardens. Many people consider the Rocambole

to be of a milder and better flavor, but the bulbs are not so large as those of the Garlic.

The plants are very hardy, and will grow in almost every soil or situation. They may be propagated either by the roots or seeds; the former ought to be separated and planted at the same time, and in the same manner as Shallots.

If raised from seeds, they may be sown in drills, either shortly after the seeds are ripe, or in the succeeding Spring; they require only to be kept clear of weeds, and in the following Autumn may be taken up, the bulbs parted, and planted as before.

RHUBARB.

RHUBARBE. *Rheum*.

RHUBARB is a genus of exotic plants, comprising seven species, of which the following are the principal:—

1. *Rhaponticum*, or Common Rhubarb, a native of Thrace and Syria, has long been cultivated in British gardens for the footstalks of the leaves, which are frequently used in pies and tarts.

2. *Rheum undulatum* is also cultivated for the same use.

3. The *Palmatum*, or true Officinale Rhubarb, is a native of China and the East Indies, whence its culture has been introduced into Europe; it produces a thick fleshy root, externally yellowish brown, but internally of a bright yellow colour, streaked with red veins. It grows to great perfection in Scotland, as far north as Perthshire, (lat. 56,) also in England, Turkey, and various other parts of Europe. When the importance of this root as a medicine is considered, it is a matter of astonishment that it has not been more generally introduced into the United States.

The several kinds of Rhubarb may be propagated by offsets taken from the roots early in the Spring, or from seed sown late in Autumn, or in March and the early part of April. The indispensable points to the production of good roots of the *Palmatum*, are depth and richness of soil, which should be well pulverized before the plants are set out. Prepare

beds of fine-mould eighteen inches deep; in these put in the plants from the seed bed, ten or twelve inches apart; this must be done when they have attained the height of four or five inches, and have thrown out as many leaves.

The first season is the most critical, and much care is necessary. If the weather be hot, the nursery must be shaded, and at all events continually watered; for water, though hurtful to old plants, is now of the first consequence. Wet weather is the most proper time to plant in. The beds must be kept free from weeds during the Summer, and on the approach of severe weather, covered up with light litter. The early part of the Spring this must be taken off, and in the beginning of April the plants must be transplanted into ground dug and prepared as directed for *Asparagus*.

Those who cultivate the *Palmatum* for the sake of the roots, should dig the ground two or three spades deep, and place the plants three feet apart every way. As to the other varieties, it is not so particular, if the plants have room to grow. In the early part of November, the leaves being then decayed, the beds should be covered with dry litter; before this is done, a little earth should be drawn round the crowns of the plants. If there be any danger of water lodging, make trenches to carry it off. In the month of March, the beds should be stripped of their covering, and the ground well hoed and cleared of weeds.

The roots of *Palmatum* must not be taken up, until six or seven years old. The stalks of the other kinds may be cut every Spring, as soon as the leaves are expanded.

If Rhubarb stalks be required for use early in the Spring, they may be obtained by placing flour barrels or deep tubs over some of the plants, and covering them up with fresh stable dung, or by any of the methods pointed out in the article under the head of Forcing Vegetables.

The stalks of this plant are used for pies and tarts. After being stripped of the skin, or outer covering, and divested of its small fibres, or stringiness, which it is liable to, in an advanced stage of growth, it should be cut transversely into very small pieces, and then parboiled with sugar, and such spices as may best suit the palate. It will keep this way the

same as other preserves, and may be used not only in pies and tarts, but it makes excellent pudding, by flattening a suety crust with a rolling pin, then spreading on the fruit, rolling it up in an oval shape, and boiling it in a cloth. The fruit this way will retain its virtues, and the pudding may be served up hot, in slices of from half an inch to an inch thick, and spreading butter and sugar between the layers.

Some boil the stalks to a juice, which being strained through a colander will keep for years, if well spiced and seasoned with sugar.

In England, large drying houses have been erected for the purpose of curing the roots of the *Palmatum*; but this business may be done in this country as it is done in China: by the heat of the sun. After the roots have been well washed, and the small fibres cut off, they are then cut transversely into pieces of about two inches thick, and dried on boards, turning them several times a day, in order to prevent the escape of the yellow juice, on which its medicinal qualities depend. In four or five days, they may be strung upon strings, and suspended in a shady, but airy and dry situation, and in two months afterwards they will be fit for the market.

SALSIFY.

SALSIFIS OU CERCIFIS. *Tragopogon porrifolius*.

THIS plant grows spontaneously in the open fields of England, and is by some highly valued for its white eatable root, and for the young shoots rising in the Spring from plants a year old; these when gathered while green and tender, are good to boil and eat in the manner of Asparagus. Some have carried their fondness for this plant so far as to call it Vegetable Oyster. It requires the same kind of soil and management as Carrots and Parsnips.

The seed may be sown the latter end of March, or early in April, an inch deep, in drills twelve inches apart. When the plants are two or three inches high, they should be thinned to the distance of six inches from each other, and

afterwards hoed. The ground should be kept clean and loose round the plants, by repeated hoeings; and in the Autumn they will be fit for use. The roots may be taken up late in Autumn, and secured in moist sand from the air; or be suffered to remain out, and dug up when wanted.

As the seeds of Salsify do not all ripen equally alike, they should be sown moderately thick. To insure a regular crop, five or six pounds should be allowed for an acre of ground, or two ounces for every three perches.

The mode of cooking recommended by an American author is, "to cut the roots transversely into thin pieces; boil them in water, or milk and water; when boiled soft, mash them, and thicken the whole with flour to some degree of stiffness; then fry them in the fat of salt pork, or butter; they are a luxury."

In England the tops are considered excellent food when boiled tender, and served up with poached eggs and melted butter. They are by some considered salutary for persons inclined to consumption. Those afflicted with any symptoms indicating an approach to such a state of health, cannot harm themselves by eating the tops, when they are to be got, which is in the month of April, and if the roots are eaten when attainable, they may, perhaps, answer a still better purpose, and even the liquor in which they are boiled may possess some of the most valuable properties of the plant.

SCORZONERA.

SCORSONERE. *Scorzonera Hispanica.*

This plant has long been raised in British gardens, for culinary purposes, and especially as an ingredient in soups, on account of its palatable and nourishing roots. Some boil and eat them like Carrots, &c.; in which case they should be deprived of their rind, and immersed in cold water for half an hour, or they will be bitter. They are raised precisely in the same manner as Salsify. If the seed be sown in

April, in a good deep soil, the roots will attain perfection in Autumn, and continue good all the Winter. They last from three to four years, according to the quality of the earth and care bestowed on them; but it is better to raise a few from seed every year.

SEA-KALE.

CHOU MARIN. *Crambe maritima.*

THIS plant is found on the sea-shore, in the southern parts of England, where it grows spontaneously. As soon as it appears above ground, the inhabitants remove the pebbles or sand, with which it is usually covered, to the depth of several inches, and cut off the young and tender leaves and stalks, as yet unexpanded and in a blanched state, close to the crown of the root; it is then in its greatest perfection. When the leaves are full grown, they become hard and bitter, and the plant is not eatable.

It is cultivated in private gardens, and for sale in various parts of England. Cultivators have differed widely respecting the mode of treating this plant; many conceiving that stones, gravel and sea sand, are essential to its growth, have gone to the expense of providing them; but it has been discovered that it will grow much more luxuriantly in a rich sandy loam, where the roots can penetrate to a great depth.

The seed of Sea-Kale may be sown in October, or as early in the Spring as the ground can be brought into good condition, in drills an inch and a half deep, and fourteen or sixteen inches asunder; the plants should be afterwards thinned out to the distance of six or eight inches from each other in the rows, and kept clear of weeds by frequent hoeings through the Summer. When the plants are a year old, every third row may be taken up, and also every other plant in each row, leaving them fourteen or sixteen inches apart; these may be transplanted into good ground prepared as directed for Asparagus. Plant two rows in each bed, about eighteen inches apart; the best way is to make two drills

three inches deep, and with a dibble set in the plants fifteen or sixteen inches from each other; when these drills are filled, the crowns of the plants will be covered nearly two inches, but they will soon push through the earth. The plants left in the seed bed may form a permanent bed, which should be forked or dug between the rows; previous to this being done, lay on an inch or two of good rotten manure, and incorporate it with the earth around the plants.

Some make new plantations with pieces of old roots, which should be cut up in lengths of about two inches, and planted in March or April, three or four inches deep, at the distance before directed for the plants.

At the approach of Winter, the leaves will die away, and disappear. The beds should be then thickly covered with dung, leaves, or sea weed; this will not only protect the plants from frost, but will cause them to shoot up early in the Spring. As soon as the frost is out of the ground, this may be taken off, or if well rotted, it may be mixed up with the earth; the crowns of the plants should then be covered to the depth of ten or twelve inches for blanching.

Some blanch it by heaping on it sea sand; some common sand and gravel; and others with large garden pots, inverted and placed immediately over the plants. If these pots be covered up with fresh horse dung, it will forward the shoots in growth, and make them sweeter and more tender.

When your plants have been covered in either method three or four weeks, examine them, and if you find that the stalks have shot up three or four inches, you may begin cutting; should you wait till all the shoots are of considerable length, your crop will come in too much at once, for in this plant there is not that successive growth which there is in Asparagus; you may continue cutting until you see the heads of flowers begin to form; and if at this time you uncover it entirely, and let it proceed to that state in which Broccoli is usually cut, and use it as such, you will find it an excellent substitute; and this greatly enhances the value of the plant; as Broccoli does not stand our Winter frosts, and can only be had when carefully protected, as recommended under that head; but this plant is sufficiently

hardy to bear our Winter frost, without much injury. You are not to weaken the roots too much by over-cutting, for in that case it would injure their next year's bearing : some of the shoots should be allowed to grow, to carry on a proper vegetation, to strengthen and enlarge the roots. Great care should be taken in cutting, not to injure the crowns of the roots by cutting the shoots too close to them. Sea-Kale should be dressed soon after it is cut, as the goodness of the article greatly depends on its not being long exposed to the air.

If you choose to force Sea-Kale, dig a trench all round a small bed, about three feet wide, and thirty inches deep ; fill it with hot dung, and as it sinks, raise it. This will make the plants grow ; and if hand lights are set over them, it will accelerate their growth.

To have this rare vegetable in perfection, it should be cooked as soon as gathered. Let it be first soaked in water, seasoned with salt, for half an hour ; then wash it in fresh water, and put it into the cooking utensil ; keep it boiling briskly, skim clean, and let off steam. When the stalks are tender, which may be expected in from fifteen to twenty-five minutes, according to size and age, take it up, dish it, and serve it up with melted butter, gravy, and such condiments as may be most agreeable to the palate.

SKIRRET.

CHERVIS, OU GYROLE. *Sium sisarum.*

THIS plant is first cultivated by seed, and afterwards by offsets taken from the old roots, and planted very early in the Spring, and before they begin to shoot ; but it is best to raise a small bed from seed every year, as the roots grow longer than those raised from slips, and are less liable to be sticky. The seed may be sown in drills the latter part of March, or early in April, and managed the same as Salsify, Parsnips, &c. In Autumn, when the leaves begin to decay, the roots are fit to use, and continue so till they begin to shoot in the Spring.

Skirrets should be planted in a light, moist soil, for in dry land the roots are generally small, unless the season proves wet.

The root of the Skirret is composed of several fleshy tubers as large as a man's finger, and joined together at the top. They are eaten boiled, and stewed with butter, pepper and salt, or rolled in flour and fried, or else cold, with oil and vinegar, being first boiled. They have much of the taste and flavor of a Parsnip, and are by some considered a great deal more palatable.

SHALLOT.

ECHALOTE. *Allium ascalonicum*.

The true Shallot, is a native of Palestine, and is considered to possess the most agreeable flavor of any of the *Allium* genus ; it is consequently highly deserving of cultivation.

It is propagated by planting bulbs, or offsets, in the fall of the year, which may be set out with a dibble, in rows twelve inches apart, by four or six inches distance in the rows ; or they may be placed in drills, two or three inches deep, and covered up with a trowel or hoe.

The gardeners about New-York plant large quantities of the bulbs towards the end of August, and early in September ; by this means they are enabled to supply the market in April and May with a mild *Allium*, which while green meets a ready sale.

Those intended for seed may remain in the ground until June or July, after the tops die down, the bulbs must be taken up, and the offsets divided : these should be kept in a dry place to plant the ensuing Autumn.

It will require at least four bushels of bulbs, if measured when first taken from the ground, to plant a quarter of an acre ; because after they are trimmed and deprived of their seed stalks, the bulk will be reduced one half.

SPINACH, OR SPINAGE.

EPINARD. *Spinacia*.

VARIETIES.

Large Round-leaved.
Broad-leaved Savoy.

Holland or Lamb's Quarter.
New Zealand.

THE *Spinacia oleracea*, or common Spinach, is very hardy, and consequently a very important vegetable for cold climates. It merits attention, from its being extremely wholesome and palatable, and from its keeping green even after having been cooked. It makes a delicious dish when served up with the gravy of roast meat, melted butter, &c.

As Spinach is the only vegetable that can be raised to advantage the latter end of the year, the gardener should prepare such ground as may have been occupied by Summer crops, towards the end of August, and by having it well manured for this crop, it will be in good condition for Beets, Carrots, Parsnips, Turnips, &c., the Spring following.

If the ground be got ready, so as to have several beds sown in succession, from the first to the end of September, the forwardest of these, if covered up with straw at the approach of cold weather, will furnish greens for the table when other vegetables are scarce, and the latter crops will recover the effects of a hard Winter, and produce a wholesome vegetable early in the Spring.

If Spinach seed be sown in rich ground in March and April, it will grow freely, but it must be cut before the approach of hot weather, or it will run to seed. To raise it in perfection at this season, it should be sown in drills about a foot apart, and kept cultivated by frequent hoeing; this will keep it in a growing state, and consequently prevent its running up to seed so quick as it otherwise would.

It is altogether useless to sow Spinach seed in poor ground; let the ground be well manured with good strong dung, and it will well reward you for your trouble by its abundant produce.

If Spinach be cultivated in drills a foot apart, it will require from seven to eight pounds of seed to plant an acre

of ground. Some gardeners use more than double that quantity in sowing broadcast.

Be careful to pick Spinach exceedingly clean, and wash it in five or six waters previous to cooking it. Some cook Spinach in a steamer over boiling water, others boil it in water; but the best way is to put it into a saucepan that will just hold it, without water, then strew a little salt upon it, and cover it close. Put your saucepan on a clear quick fire; and when you find the Spinach shrunk and fallen to the bottom, and the juice which comes from it boil up, it is done. In order that it be rendered capable of absorbing a moderate quantity of gravy, melted butter, &c. which are indispensable with green vegetables, let it be well drained in a sieve, or colander, before it is dished.

The New Zealand Spinach or *Tetragona expansa*, is of late introduction into this country; its nature seems to be opposite to the common Spinach, as it will endure the heat better than the cold. It may be obtained in the summer, by planting the seeds in April and May. Being of luxuriant growth, it should be planted in hills three feet apart, and about two seeds in a hill. The leaves will be fit for use during the Summer, and until late in the Autumn.

SQUASH.

GOURDE GIRAUMON ou POTIRON, *Cucurbita melopepa*.

VARIETIES,

Early Bush Squash,
Early Crookneck,
Large Cushaw.

Vegetable Marrow.
Winter Crookneck.
Lima Cocoonut.

THE several varieties of Squashes are very useful in this and other warm climates, as they can be grown in perfection in the Summer, and therefore prove a good substitute for Turnips, which cannot be raised in perfection in hot weather. They should be planted in hills, prepared in the same manner as for Cucumbers and Melons, and their subsequent management is the same in every respect. The bush kinds

should be planted three or four feet apart, and the running kinds from six to nine, according to their nature, as some will run more than others. It is always best to plant five or six seeds in a hill, to guard against accidents; as when the plants are past danger, they can be thinned to two or three in a hill. One ounce of Squash Seed will plant from fifty to one hundred hills, according to the sorts and size of the seed.

The fruit of the Early Summer Squashes is generally gathered for use before the skin gets hard, and while it is so tender as to give way to a moderate pressure of the thumb nail. The Winter Squashes should be suffered to ripen, and collected together in October, in the manner recommended in the calendar for that month.

All kinds of Squashes should, after having been boiled tender be pressed as close as possible between two wooden trenchers, or by means of a slice or skimmer, made of the same materials, until dry, and then prepared for the table in the same manner as Turnips.

TOMATO.

TOMATE, OU POMME D'AMOUR. *Solanum lycopersicum*.

VARIETIES.

Large Squash-shaped. | Cherry-shaped.

THE Tomato, or *Love Apple*, is much cultivated for its fruit, in soups and sauces, to which it imparts an agreeable acid flavour; it is also stewed and dressed in various ways, and is considered very wholesome.

The seed should be sown early in March, in a slight hot-bed, and the plants set out in the open ground, if settled warm weather, in the early part of May. In private gardens it will be necessary to plant them near a fence, or to provide trellises for them to be trained to, in the manner recommended for Nasturtiums; they will, however, do very well, if planted out four feet distant from each other every way.

Tomatoes may be brought to perfection late in the summer, by sowing the seed in the open ground the first week in May; these plants will be fit to transplant early in June, and the fruit may ripen in time for preserves or Catsup.

One ounce of good Tomato Seed will produce upwards of four thousand plants; and a single plant has been known to yield upwards of a bushel of fruit.

Tomatoes may be preserved in a stone or glazed earthen pot, for use in the Winter, by covering them with water in which a sufficient quantity of salt has been dissolved to make it strong enough to bear an egg. Select perfectly ripe berries, and cover the pot with a plate in such a manner that it presses upon the fruit without bruising it.—Previous to cooking these Tomatoes, they should be soaked in fresh water for several hours.

Besides the various modes of preparing this delicious vegetable for the table, it may be preserved in sugar, and used either as a dessert, or on the tea-table, as a substitute for Peaches or other sweetmeats. It also makes exquisite pies and tarts, and excellent catsup.

A celebrated writer observes, that “the common Tomatoe made into a gravy, by stewing over the fire, and used as a sauce for meat, has been known to quicken the action of the liver and of the bowels, better than any medicine he ever made use of.” He states further, that—“When afflicted with inaction of the bowels, head-ache, a bad taste of the mouth, straitness of the chest, and a dull and painful heaviness of the region of the liver, the whole of these symptoms are removed by Tomatoe sauce, and the mind, in the course of some few hours, is put in perfect tune.”

To make them into catsup, use one pint of salt to one peck of Tomatoes; bruise them, and let them stand two days; then strain them dry, and boil the juice until the scum stops rising, with two ounces of black pepper, the same quantity of pimento or allspice, one ounce of ginger, one of cloves, and half an ounce of mace.

TURNIP.

NAVET. *Brassica rapa.*

VARIETIES.

Early Garden Stone.	} Best for the Garden.	Large English Norfolk.
Early White Dutch.		Long Tankard, or Hanover.
Swan's Egg.		White Flat, or Globe.
Early Red Top.		Large Bullock.
Strap Leaved Red Top.		Yellow Altringham.
Early Green Top.		Dale's Yellow Hybrid.
Yellow Stone.		Yellow Aberdeen.
Long Yellow French.		Russia, Swedish, or Ruta Baga.

THIS is a wholesome and useful plant, both for man and beast, and highly deserving of cultivation. Its being the last esculent vegetable on our catalogue, that is raised from seed sold at our several seed stores, I shall endeavour to stimulate those of our yeomanry who have hitherto neglected the culture of this field as well as garden production, to exertion and diligence, by inserting a few extracts from a paper that now lies before me.

“*Culture of Turnips.*—Until the beginning of the eighteenth century, this valuable root was cultivated only in gardens, or other small spots, for culinary purposes; but Lord Townsend, who attended King George the First in one of his excursions to Germany, in the quality of Secretary of State, observed the Turnip cultivated in open and extensive fields, as fodder for cattle, and spreading fertility over lands naturally barren, on his return to England, brought over some of the seed, and strongly recommended the practice which he had witnessed, to the adoption of his own tenants, who occupied a soil similar to that of Hanover. The experiment succeeded; the cultivation of Field Turnips gradually spread over the whole county of Norfolk, and has made its way into every other district of England. The reputation of the county as an agricultural district, dates from the vast improvements of heaths, wastes, sheep walks, and warrens, by enclosing and manuring; the fruits of the zealous exertions of Lord Townsend, and a few neighbouring land owners, which were, ere long, imitated by others. Since these improvements were effected, rents

have risen in that county from one or two shillings to twenty shillings an acre ; a county consisting chiefly of sheep walks and rabbit warrens, has been rendered highly productive ; and, by dint of management, what was thus gained has been preserved and improved to the present moment. Some of the finest grain crops in the world are now growing upon land, which, before the introduction of the Turnip husbandry, produced a very scanty supply of grass for a few lean and half-starved rabbits.

“ Mr. Colquhoun, in his ‘ *Statistical Researches*,’ estimated the value of the Turnip crop annually growing in the United Kingdom of Great Britain and Ireland, at fourteen million pounds sterling, (equal to upwards of SIXTY MILLIONS OF DOLLARS.) But when we further recollect, that it enables the agriculturist to reclaim and cultivate land, which without its aid, would remain in a hopeless state of natural barrenness, that it leaves the land clean and in fine condition, and also to insure a good crop of Barley, and a kind plant of Clover ; and that this Clover is found a most excellent preparative for Wheat, it will appear that the subsequent advantages derived from a crop of Turnips must infinitely exceed its estimated value as fodder for cattle.” (Sir William Scott in the Quaterly Review.) As I have undertaken to “ assist the Young Gardener,” I shall proceed to point out the most proper means of cultivating this truly valuable vegetable in his garden.

The preceding remarks show the kind of land that may be made capable of producing not only Turnips, but other things of equal value. It must however be granted, that some soils naturally suit particular kinds of vegetables better than others, and that in general, exotic plants will succeed best in such soils as are nearest like their own native soil. As we have not always a choice, I would inform the Young Gardener, if he has a very light soil which is not suitable for vegetables in general, he may sometimes get two crops of Turnips from it in one year, by sowing seed for the first crop early in March, and that for his second in the middle of August. For general crops, it will be better to have ground manured with short rotten dung, or compost con-

taining a considerable proportion of coal, wood, peat, or soaper's ashes. Ground that has been well manured for preceding crops, and also ground fresh broken up, will suit well for Turnips.

Previous to sowing Turnip seed, the gardener should procure a suitable quantity of lime, soot, or tobacco dust, so as to be prepared for the attacks of insects. It should be recollected that Turnip seed will sometimes sprout within forty-eight hours after it is sown, and that very frequently whole crops are devoured before a plant is seen above ground. A peck of either of these ingredients, mixed with about an equal quantity of ashes, or even dry road dust, sown morning and evening for the first week after sowing the seed, would secure an acre of ground, provided it be so contrived that the wind carry it over the whole piece of land, and as it often changes, this may be effected by crossing the land in a different direction every time according as the wind may serve.

As some very erroneous ideas have been extensively circulated in respectable periodicals, respecting the cultivation of this valuable root, I would earnestly recommend that particular attention be paid to the time of sowing the seed; for if the first crop be not sown soon enough to be gathered early in July, they are seldom fit for the table, being hot, stringy, and wormy; and if the crop intended for Autumn and Winter use be sown long before August, unless it be a very favourable season, if even they escape the attacks of insects and reptiles, they often get so defective, that they seldom keep the Winter.

To have Turnips in perfection, they should be hoed in about a month after they are sown, or by the time the plants spread a circle of about four inches, and again, in about a month from the first hoeing, leaving them from six to nine inches apart, they will yield the cultivator more profit this way, than when left to nature, as is too frequently done.

It is generally admitted that one pound of Turnip seed is amply sufficient for an acre of ground, yet some will use considerably more, because of the difficulty of distributing so small a quantity of seed regularly broadcast. This difficulty

is however obviated by sowing the seed in drills, and although it may seem a tedious process to those who have no other means of doing it than by hand, the facilities afforded of hoeing between the rows, more than compensates for the extra labour.

I once induced a friend of mine to sow four ounces of Turnip seed, in drills a foot apart, by which means he made it extend over upwards of half an acre of land ; and by hoeing the plants twice, he had the gratification of pulling four hundred bushels of handsome Turnips, which is more than is generally taken from an acre of land cultivated in the ordinary way.

The most esteemed kinds of Turnips for gardens, are marked in the catalogue, I shall therefore leave my readers to their own choice.

As the Yellow Swedish, or Russian Turnip, or *Ruta Baga*, is in great repute, I shall quote a few lines from the "American Gardener," by William Cobbett, the great advocate for *Ruta Baga*.

"The Swedish Turnip, so generally preferred for table use here, and so seldom used for the table in England, ought to be sown early in June, in rows a foot apart, and thinned to three inches in the rows. About the middle of July they should be transplanted upon ridges three feet apart, (in a garden,) and during their growth, ought to be kept clear of weeds, and to be dug between, twice at least, as deep as a good spade can be made to go ; but the Swedish Turnip is of further use as producing the most excellent greens in the Spring, and at a very early season. To draw this benefit from them, the best way is to leave a row or two in the ground, and when the Winter is about to set in, cover them all over with straw, or cedar boughs. Take these off when the Winter breaks up, and you will have very early and most excellent greens ; and when you have done with the greens, the Turnips are very good to eat."

If seeds of the Russia Turnip be sown in drills, about the middle of July, or even early in August, they will make fine roots by Autumn, without transplanting, provided the ground be good, and well worked. When the plants are

up strong, they must be hoed and thinned to the distance of twelve or fifteen inches from each other; another hoeing will be necessary in five or six weeks afterwards. This will make them grow freely.

The Turnip is a favourite vegetable with some, and in England, a leg of mutton and caper sauce is considered by epicures as but half a dish without mashed Turnips. To have them in perfection, they should, after having been deprived of their rind, be equalized by cutting the largest transversely in the centre, and then after being boiled tender, let them be taken up, and pressed as dry as possible; at the same time, let a lump of butter and a due portion of Cayenne pepper and salt be added, and be beaten up with the Turnips until properly mixed. Use the natural gravy from the meat unadulterated, and such condiment as may be most esteemed.

AROMATIC, POT, AND SWEET HERBS.

GRAINES D'HERBES AROMATIQUES, ODORIFERANTES ET A L'USAGE DE LA CUISINE.

Angelica Garden,	<i>Angelica atropurpurea.</i>
Anise,	<i>Pimpinella anisum.</i>
Basil Sweet,	<i>Ocimum basilicum.</i>
Borage,	<i>Borago officinalis.</i>
Burnet Garden,	<i>Poturium sanguisorba.</i>
Caraway,	<i>Carum carui.</i>
Ohervil, or Cicely the Sweet,	<i>Scandix odorata cerefolium.</i>
Clary,	<i>Salvia sclara.</i>
Coriander,	<i>Coriandrum sativum.</i>
Dill,	<i>Anethum graveolens.</i>
* Fennel, Common,	<i>do. feniculum.</i>
* do. Sweet,	<i>do. dulce.</i>
Marigold, Pot,	<i>Calendula officinalis.</i>
* Marjoram, Sweet,	<i>Origanum marjorana.</i>
* Mint, Spear,	<i>Mentha virides.</i>
* do. Pepper,	<i>do. piperita.</i>
* do. Pennyroyal,	<i>do. pulegium.</i>
* Sage, Common,	<i>Salvia officinalis.</i>
* Sage, Red,	<i>do. clandestinoides.</i>
Savory, Summer,	<i>Satureja hortensis.</i>
* do. Winter,	<i>do. montana.</i>

*Tarragon,
* Thyme, Common,
* do. Lemon,

Artemisia dracuncul.
Thymus vulgaris.
do. serpyllum.

Aromatic Herbs are such as impart a strong spicy odour and savoury taste ; many of them are used as small pot herbs, and for sauces, stuffings, and other uses in cooking. As only a small quantity of these are necessary in private gardens, a bye corner may be allotted for them, and such medical herbs as may be wanted in a family.

It may be necessary for me to explain, as we go along, that there are three principal descriptive names given to plants, namely, Annuals, Biennials, and Perennials. The Annuals being but of one season's duration, are raised every year from seed. The Biennials are raised from seed one year, continue till the second, then perfect their seed, and soon after die ; some of these should be also raised every year from seed. The Perennials may be also raised from seed, but when once raised, they will continue on the same roots many years. Those marked * are of the latter description, and may be propagated by suckers, offsets, cuttings, or partings, of the roots. Those who have not already a plantation of these herbs, may sow seeds of any of the different kinds in March or April, in drills about an inch deep, and twelve inches apart, each kind by itself. The plants may be afterwards transplanted into separate beds ; or, if a drill for each kind be drawn two feet apart, the seed may be sown in them, and the plants afterwards thinned out to proper distances, according to the natural growth of the different kinds of plants.

PLANTS CULTIVATED FOR MEDICINAL AND OTHER PURPOSES.

GRAINES DE PLANTES MEDICINAL.

Bene,
Bonaset, or Thoroughwort,
* Balm,
Bean, Castor Oil,

Sesamum orientale.
Eupatorium perfoliatum.
Melissa officinalis.
Ricinus communis.

Burdock,	<i>Arctium lappa.</i>
Catnep,	<i>Nepeta cataria.</i>
Celandine,	<i>Chelidonium majus.</i>
* Chamomile.	<i>Anthemis nobilis.</i>
* Comfrey,	<i>Symphytum officinale.</i>
* Elecampane,	<i>Inula helenium.</i>
Feverfew,	<i>Chrysanthemum parthenium.</i>
* Horehound,	<i>Marubium vulgare.</i>
* Horsemint,	<i>Monarda punctata.</i>
* Hyssop,	<i>Hyssopus officinalis.</i>
* Lavender,	<i>Lavendula Spica.</i>
Loveage,	<i>Ligusticum levisticum.</i>
* Mallow, Marsh,	<i>Althea officinalis.</i>
* Motherwort,	<i>Leonurus cardiaca.</i>
* Patience Dock,	<i>Rumex patens.</i>
* Pinkroot, Carolina,	<i>Spigelia Marylandica.</i>
Poppy Opium, (annual,)	<i>Papaver somniferum.</i>
* Rosemary,	<i>Rosmarinus officinalis.</i>
* Rue, Garden,	<i>Ruta graveolens.</i>
Saffron, Bastard,	<i>Carthamus tinctorius.</i>
Scullcap, or Mad Dog Plant,	<i>Scutellaria lateriflora.</i>
Snakeroot, Virginian.	<i>Aristolochia serpentaria.</i>
* Sorrel,	<i>Rumex acetosa.</i>
* Southernwood,	<i>Artemisia abrotanum.</i>
* Speedwell, Virginian,	<i>Veronica Virginica.</i>
* Spikenard,	<i>Aralia racemosa.</i>
* Tansy,	<i>Tanacetum vulgare.</i>
* Wormwood,	<i>Artemisia absinthium.</i>

THE generality of Aromatic, Sweet, and Medicinal herbs, may be raised from seed sown in March and April. The greater part of the above described plants are Perennial, and will multiply from seeds they drop, or from partings from the roots. The offsets, roots, or young plants thus raised, should be planted at suitable distances from each other early in the Spring.

The beds should be afterwards kept free from weeds, and as the herbs come into flower, they should be cut on a dry day, and spread in a shady place to dry for Winter use. The best way to preserve them after they are dried, is to rub them, so as to pass them through a sieve, then pack them in bottles or boxes, each kind separate; they should be afterwards kept in a dry place.

In the month of October, the herb beds should be examined. Lavender, Rosemary, and other tender plants, should be taken up, potted, and placed in a frame or greenhouse for the Winter. Thyme, Hyssop, Winter Savory, Southernwood, Sage, Rue, and the like, will require their tops to be neatly dressed; and Pot Marjoram, Burnet, Tarragon, Tansey, Pennyroyal, Sorrel, Chamomile, Fennel, Horehound, Mint, Lovage, and other kinds of hardy perennial herbs, should be cut down close to the ground.

After this is done, it will be proper to dig lightly, and loosen the ground between the roots of the shrubby plants; but the beds of close-growing running plants, such as Mint, Running Thyme, and all other creeping herbs, will not well admit of digging; therefore, after the stalks are cut down, and the beds cleared of weeds, dig the alleys, and strew some of the loose earth evenly over the beds; and if the ground be rather poor or light, a top dressing of very rotten dung will be of considerable service.

This dressing will give proper nurture and protection to the roots of the plants, a neat appearance to the garden, and in Spring the shoots will rise with renewed vigour.

Having finished the catalogue, I proceed to give directions for making the most of a piece of ground well manured for early crops. In the general directions at the commencement, I observed that good rich manure was indispensably necessary to the production of some particular kinds of vegetables; it may be further observed, that rich ground will produce two or three valuable crops, but it requires some attention to make use of it to the best advantage. If the gardener has leisure to dig such ground in March or April, as he intends for Beans, Cucumbers, Tomatoes, Eggplants, or other tender plants, he may raise Radishes, Spinach, Lettuce, or other small Salads on it, by leaving a space for his hills or drills; or Radish seed may be sown lightly over the beds of Beets, Carrots, Parsnips, &c., but they must not be suffered to run to seed, as this would injure the other plants. When the first crops are gathered, it requires a little consideration before a second is planted, in order that a sufficient quantity of the best ground be

reserved for the most particular and valuable varieties of vegetables.

That I may be understood, I have adopted the following plans, representing beds of earth ; this will answer the same purpose as bringing my readers on the ground.

No. 1. The following lines represent drills six inches apart :

March 25.—Sow Parsley, Onion, or other small seeds.
Sow Radish seed.
Sow Parsley, Onion, or other small seeds.

The Radishes being pulled early in May, leaves the intermediate ground for the other plants.

No. 2. Drills ten inches apart ;

April 1.—Sow Spinach, or Radish seed.
15.—Plant early Cabbage Plants.
April 1.—Sow Spinach, or Radish seed.

By the time the Cabbage requires the whole of the ground, the Spinach or Radishes may be gathered.

If this bed be cleared of the second crop by the middle of July, it may be planted with Celery, Turnip, or Black

Radish seed. If the Cabbage be of the late heading kinds, the ground may be reserved for the first sowing of Spinach, Feticus, Lettuce, &c. in which case it will require a fresh coat of manure.

No. 3. Drills 10 or 12 inches apart.

March 20.—Plant slips or cuttings of Horse Radish.

Plant Turnip-rooted Beet seed, (see page 59.)

Plant slips or cuttings of Horse Radish.

If required, a light crop of Radishes may be raised on this bed, which should be pulled while young.

Hoe and thin out the Beets as they progress in growth, and when full grown, they may be gathered, without disturbing the Horse Radish.

No. 4.—Rows, or drills, fourteen inches apart :

March 20.—Plant Hardy Lettuce Plants.

Do. Hardy Lettuce Plants.

Hoe them the first week in April—previous to hoeing the second time, draw a drill between each row of plants, and plant Beet or Carrot seed ; this may be covered up in

hoeing the Lettuce, and by the time the plants are up strong, the Lettuce will be fit to cut. If these roots are well attended to, they may be cleared off soon enough to produce Fall Cabbage, Leeks, Celery, Turnips, Black Radishes, &c.

No. 5.—Rows or drills, sixteen inches apart.

March 25.—Plant Hardy Lettuce Plants.

Do. Hardy Lettuce Plants.

April 20.—Plant Early York Cabbage Plants, either between the rows or between the Lettuce.

As soon as the Lettuce is off, hoe the Cabbage, and it will soon cover the ground.

This ground will be suitable for a crop of any of the varieties above mentioned, except Cabbage, the roots of which are apt to get defective, if the same ground be planted with Cabbage twice in succession.

The above, or preceding plans, present a fair specimen of what may be done on a small piece of good ground. If the young gardener will take the trouble to keep an account of his transactions, he would soon make discoveries of still greater importance. If he be not sufficiently acquainted with the different varieties of Cabbage plants, for instance, so as to distinguish the one from the other, he, by making a memorandum at the time of sowing the seed, would soon get acquainted with the different varieties of plants; he would also discover the difference in the growing of his seeds, and know who to blame if any particular kind should not come up.

The following represents a Hot-Bed with four sashes, sown March 1.

Early Dwarf	Early Battersea	Early Lettuce	Egg-Plant
Early York	Drumhead, or	Tomatoo Seed,	Seed, &c.
or other Spring	other Summer	Peppers,	partitioned off
Cabbage Seed.	Cabbage Seed	&c. in shallow	as directed in
		drills.	note to article
			Egg-plant.

It may be necessary to remind my readers of the necessity of being always prepared to sow Cabbage, Lettuce, Tomatoo, and Egg-plant seeds in hot-beds the last week in February, or early in March; for this purpose, let some fresh stable dung and rich compost be engaged beforehand. Some gardeners make their beds on the level ground, but it is always safest to make them in pits from eighteen inches to two feet deep;* in order to do this, the pits should be dug in Autumn, or a heap of dung may be deposited on the ground intended for the beds before the frost sets in, and good earth may be obtained from the pits without any difficulty.

The frames should be made of good sound planks; the back plank may be two feet wide, and the end ones may be so sloped as to make a fifteen inch plank do for the front. A frame calculated for four sashes of three feet in width by six in length, as above described, should be nearly thirteen feet long, and about six broad at the top.

The frame being set over the pit, and properly fastened, the fresh dung should be spread regularly in the pit to the

* When durable heat is required for forcing vegetables, the beds should be made on level ground, in order that linings may be applied to the outside of the frame, which by frequent renewal, will enliven the heat of the bed, and thus bring tender vegetables to maturity, which would otherwise suffer from a decline of the heat. For particular directions, see Observations on Forcing Vegetables—also article on Forcing Asparagus.

depth of twenty to twenty-four inches ; if the dung be in a good heating condition, cover it with six or eight inches deep of mould, then lay on the sashes, and protect the beds from the inclemency of the weather. In two or three days the rank steam may pass off; it will then be necessary to stir the mould before the seed be sown, to prevent the growth of young weeds that may be germinating; then sow the seed either in shallow drills or broadcast, as equally as possible, reserving a small quantity of the warm mould to be sown or sifted over the seeds. The beds should be afterwards attended to, as directed for Broccoli and Cauliflower. This description of a hot-bed is intended expressly for the raising of Spring Cabbage, Lettuce, Tomatoes, and such other plants as may be required for early planting. Beds made earlier in the season, or for forcing, will require a greater substance of manure. See calendar for January, February, and March.



OBSERVATIONS


ON
FORCING VEGETABLES.

BEFORE I commenced preparing this work for the press, I intended to have written largely on the subject of forcing fruits as well as vegetables; but when I considered my motto, and that I was writing for young gardeners, I concluded to occupy my pages in such a manner as to effect the greatest possible good at the smallest expense. Of the several branches of Horticulture, some are of greater importance than others; and as the products of the kitchen garden form important articles of food for the bulk of mankind, it should be our first care to treat largely on the subject of this most useful part of gardening. Next to this is the cultivation of fruits, and the production of ornamental plants and flowers, each of which will be noticed in the respective departments.

As I stand pledged to offer some remarks on forcing, or rather forwarding vegetables by artificial means, I shall endeavour to confine my observations to such points as are of primary importance; and in order to convince my readers of the importance of this subject, I shall first endeavour to show the utility of an artificial climate suited to the various species of useful plants. In England, a regular succession of vegetables can be obtained from the natural ground in every month of the year, and their fruits, from the Summer heat being moderate, are of longer continuance than with us, and yet they make gardening a science, and employ the elements, as well as the ingenuity of man, to the production of fruits and vegetables out of the ordinary season.

I shall not attempt to treat of the cultivation of Pine Apples, Grapes, Cherries, or other fruits grown in forcing houses; nor would it be advisable with us to undertake to raise Cucumbers, Melons, &c. in frames throughout the severe Winters of our Northern States, but it must be acknowledged, that the extreme heat of our Summers is as detrimental to the cultivation of some of the most valuable kinds of fruits and vegetables, as the coldness of our Winters, and for those reasons, artificial aid is more necessary here in the Winter and Spring of the year than in England. The inhabitants of that country may obtain a supply of the different varieties of Artichokes, Broad Beans, Borecole, Broccoli, Cauliflower, Kale, Lettuce, Radishes, Rhubarb, Spinach, Turnips, and Salads in general, a great part of the year, from their kitchen gardens, whereas, if we were to attempt to supply our markets with culinary vegetables at all times, in any thing like the abundance that they have them there, we must, out of the ordinary season for gardening operations, turn our attention to the protecting and forwarding as well as the forcing system.

Before I proceed to show the method of forcing vegetables, it may be necessary for me to remind my readers, that in providing an artificial climate, they should consider the nature of the plants they intend to cultivate, and endeavour to supply them with that which is best calculated to nourish

and support them. I have, in another part of this work, endeavoured to show, that heat, light, air and moisture, are each essential to vegetation, and that these should be supplied in a judicious manner, according to circumstances.

In the midst of our Northern Winters, which is the usual time for forcing in England, we are subject to north-west winds, which produce extreme freezing. Now, as we have not yet discovered how to make an artificial air, it will not be safe for the gardener to raise a bottom heat under any kind of vegetable, until such times as he can impart a tolerable share of salubrious air, as the heat without air will soon destroy the fruits of his labour.

Perhaps the safest time to commence forcing in frames, is soon after the middle of February, and the early part of March. I before hinted, that the depth of heating materials must be regulated by the season of the year at which the work is commenced, and also to the purposes for which the hot-beds are intended. Beds used for the purpose of raising half hardy plants, or for procuring seedling plants late in the Spring, may be made in the manner recommended for the common hot-bed; but if substantial heat is required to be kept up, the beds must be so contrived as to admit of linings as the heat decreases; and the dung should undergo a regular process of preparation, according to the use it is intended for. Compost heaps should also be provided, in order to furnish suitable mould to the different species of plants; for this purpose, all the old hot-bed dung and mould, leaves, tan, turf, sand, and other light manures and decayed animal dung, should be collected together.

In some cases when a slight hot-bed is recommended for forwarding hardy plants, if it should happen that a seedling Cucumber bed be at liberty, it may answer every purpose for Radishes, Lettuce, or other hardy plants; or such a bed may be spawned for Mushrooms, if required.

If the forcing be commenced before the coldest of the Winter is past, great precaution must be used lest the plants should be injured by cold cutting winds, or destroyed by heat for want of air. To prevent the former accident, warm dung should be placed around the frames, and the

sashes should be covered with mats and boards every night. If full air cannot be admitted in the day time, the sashes must be slidden down to let off the steam, at the same time mats may be laid over the aperture, to prevent cold air entering to the plants.

If the bottom heat in a bed be too violent, which is sometimes the case, means must be used to decrease it. This is generally effected by making holes in the bed with a stake sharpened at the end, or with a crow-bar; which holes should be filled up when the heat is sufficiently reduced. In lining hot-beds, if the heat is reduced in the body of the beds, holes may be carefully made to admit heat from the fresh linings, so as to enliven the heat of the bed.

A Fahrenheit Thermometer should be always at hand, at the time of forcing, to be used when necessary, to regulate the heat in the beds; and the water that is used in cultivating plants in frames, should be warmed to the temperature of the air, or according to the heat required for the various kinds of plants, which will be shown in the annexed articles.

FORCING ASPARAGUS IN HOT-BEDS.

As Asparagus is apt to grow weak and slender by extreme bottom heat, it is forced with greater success, and with less trouble, in flued pits in a hot-house, than in dung hot-beds, because the heat from tan is more regular; but a very suitable bed may be formed in a deep hot-bed frame, made in the usual way. If dung alone, or a mixture of dung and leaves be used, it should be in a state past heating violently before it is made into a bed; but if the gardener has no choice of materials, he may make his hot-bed in the usual way, and if the depth of heating materials be two feet, he may lay on a foot of old hot-bed dung, tan or any light compost, that will admit of the heat passing through it.

It may be necessary to state further, that though too much bottom heat should be avoided, heat is necessary to the production of the vegetable in a moderate time, which is generally effected in a month or six weeks after the com-

mencement of the operations. For the purpose of keeping up a regular heat, a lining of hot dung should be applied around the frame, and changed as occasion requires.

Provide plants from two to four, or even six years old, trim their roots, and place them in rows on the beds ; when one row is laid, strew a little mould among the roots, then proceed in the same way with one row after another, keeping them on a level, as the surface of the bed at first lay, till you have finished planting them ; then lay among the buds and roots some fine vegetable, or other rich mould, working it in amongst them with your fingers, and cover the beds over about an inch thick, and above that lay three inches in depth of vegetable mould not very rotten, old tan, or any other light compost, that will admit the water to run quickly through.

If there be a strong heat in the bed, slide down the sashes till it begins to decline. The temperature at night should never be under 50° and it may rise to 65° without injury ; when the buds begin to appear, as much air must be daily admitted as the weather will permit. In two or three days after the beds are planted, the heat will begin to rise : the beds should then have a moderate supply of water applied from a watering pot with the rose on ; repeat such watering every three or four days.

When the buds are up three inches above the surface, they are fit to gather for use, as they will then be six or seven inches in length. In gathering them, draw aside a little of the mould, slip down the finger and thumb, twist them off from the crown : this is a better method than to cut them ; at least it is less dangerous to the rising buds, which come up thick in succession.

An ordinary sized frame calculated for three sashes will hold from three hundred to five hundred plants, according to the age and size, and will, if properly managed, yield a dish every day for about three weeks. On the above estimate, if a constant succession of Asparagus be required, it will be necessary to plant a bed every eighteen or twenty days.

Rhubarb and Sea Kale may be, and sometimes are, forced in the same manner as Asparagus; but the most general mode is to excite them where they stand in the open garden, by the application of warm dung.

FORWARDING BROAD BEANS OR ENGLISH DWARFS.

In the article, Broad Bean, *vicia faba*, I have already urged the necessity of early planting, in order that a full crop may be insured before the approach of warm weather; but as the ground is often frozen at the time they ought to be planted, some of the best kinds may be planted in boxes, and placed in a moderate hot-bed in February, or early in March. If the plants thus raised be not nursed too tender, they may be transplanted into the open ground the latter end of March; this will enable them to produce their fruit early in June.

Or if a heap of manure be spread thick on a piece of ground late in Autumn, it will keep the earth from freezing, and if this manure be removed in February, and a frame placed over and protected from extreme cold, the seedlings may be raised therein, and transplanted into the garden as directed in page 31.

Those who have not the convenience of hot-beds or frames, may, in the month of February, plant some of the seed about two inches deep in boxes kept in a cellar, or in earth on the floor, which will produce plants fit to transplant in the open garden towards the latter end of March or early in April.

FORCING KIDNEY BEANS.

The most dwarfish kinds of Kidney Beans may be raised in hot-beds; but they require a substantial heat to mature them. The temperature within the frames should be kept up to 60, and may rise to 70 or 75°, provided the steam is let off. In order to insure sufficient heat to bring

them into a bearing state, the plants may be first raised in small pots plunged into a hot-bed, or a small bed may be prepared, earthed over with light rich compost, six inches deep, and the Beans planted therein, and covered one inch.

The second hot-bed should be earthed over to the depth of eight or nine inches: and the Beans transplanted as soon as they are two or three inches high, in cross rows twelve or fifteen inches apart, by three or four inches in the rows, or in clumps a foot apart. When the season is so far advanced that one bed, with the help of linings, will bring the plants well into fruit, the seed may be planted at once to remain for podding; or if the gardener should choose to mature his crop in the open ground, he may raise his plants in boxes or pots in the month of April, and plant them out in a warm border early in May.

Beans raised in hot-beds, will require considerable attention;—cover the glasses every night with mats and boards; admit fresh air every mild day, give occasional gentle waterings, and earth them up carefully as they progress in growth, to strengthen them.

FORWARDING BROCCOLI AND CAULIFLOWER.

In treating of the method of cultivating this family of plants, in the articles under each head, I recommended an artificial climate to be provided for them, so as to induce them to arrive at full perfection in the Winter and early part of the Spring. Such gardeners as may have provided frames for the purpose of making hot-beds in the Spring, may make use of them through the Winter, in protecting Broccoli and Cauliflower; and as the frames will not be wanted until the severity of the Winter is past, such plants as may be left at that season, may be protected by a covering of boards, straw, or litter, as occasion may require.

If Cauliflower be required early in the Summer, the plants raised in the preceding Autumn should be transplanted from the beds into the open ground in the month of March, and be protected by hand glasses. This would

insure their heading before the approach of extreme warm weather, which is very injurious to Cauliflower.

FORCING CUCUMBERS.

To produce Cucumbers at an early season, should be an object of emulation with every gardener. The business of forcing them should commence about eight or ten weeks before the fruit is desired, and a succession of plants should be raised to provide for accidents. Some choose the Short prickly, other, the Green Cluster and Southgate; and seed that is two or three years old is generally preferred, as it is not so apt to run to vines.

The seed is generally sown in pots or boxes of light rich mould, and placed in a hot-bed; and some sow the seeds in the earth of a small bed prepared for the purpose. In either case, as soon as the plants have fully expanded their two seed leaves, they may be transplanted into pots; put three plants into each pot; when this is done, apply water warmed to the heat of the bed, and shut down the glasses, keeping them a little shaded by throwing a mat over the glass, till the plants have taken root. When they are about a month old, they will be fit to transplant into the fruiting bed.

Well preparing the dung, is of the greatest importance in forcing the Cucumber, and if not done before it is made into a bed, it cannot be done after, as it requires turning and managing to cause it to ferment freely and sweetly. Fresh dung from the stable should be laid into a heap, turned three times, and well mixed with a fork; if any appears dry, it should be made wet, always keeping it between the two extremes of wet and dry, that the whole may have a regular fermentation.

A dry situation should be chosen for beds to be formed on, so that no water can settle under the dung. The substance of dung from the bottom of the bed should be from three to four feet, according to the season of planting, and

the moulding should be done as soon as the bed is settled, and has a lively regular tempered heat. Lay the earth evenly over the dung, about six inches deep; after it has lain a few days examine it, and if no traces of a burning effect are discovered, by the mould turning of a whitish colour, and caking, it will be fit to receive the plants; but if the earth appears barnt, or of a rank smell, some fresh sweet mould should be provided for the hills, and placed in the frame to get warm, at the same time, vacancies should be made to give vent to the steam, by running down stakes.

After the situation of the bed has been ascertained, and the heat regulated, the hole should be closed, and the earth formed into hills; raise one hill in the centre under each sash, so that the earth is brought to within nine inches of the glass; in these hills, plant three seedlings, or turn out such as may be in pots, with the balls of earth about their roots, and thus insert one patch of three plants in the middle of each hill. The plants should be immediately watered with water heated to the air of the bed, and kept shaded till they have taken root.

The temperature should be kept up to 60° , and may rise to 80° without injury, provided the rank steam be allowed to pass off; therefore, as the heat begins to decline, timely linings of well prepared dung must be applied all round the frame; begin by lining the back part first; cut away the old dung perpendicularly by the frame, and form a bank two feet broad, to the height of a foot, against the back of the frames: as it sinks, add more; renew the linings around the remainder of the bed as it becomes necessary, and be careful to let off the steam, and give air to the plants at all opportunities.

Give necessary waterings, mostly in the morning of a mild day, in early forcing; and in the afternoon in the advanced season of hot sunny weather. Some use water impregnated with sheep or pigeons' dung. As the roots begin to spread, and the vines to run, the hills should be enlarged by gathering up the earth around them, a supply of good mould should be furnished to gather up as required, for earthing around the plants.

When the plants have made one or two joints, stop them, after which they generally put forth two shoots, each of which let run till they have made one or two clear joints, and then stop them ; and afterwards continue throughout the season to stop them at every joint ; this will strengthen the plants, and promote their perfecting the fruit early.

The following artificial operation is recommended by Abercrombie, Phial, and other writers, as essential to the production of a full crop of Cucumbers under glass. In plants more freely exposed to the open air, the impregnation is effected by nature. Those which some call false blossoms are the male flowers, and are indispensable in this operation.

" The Cucumber," Abercrombie observes, " bears male and female blossoms distinctly on the same plant. The latter only produce the fruit, which appears first in miniature, close under the base, even before the flower expands. There is never any in the males ; but these are placed in the vicinity of the females, and are absolutely necessary, by the dispersion of their farina, to impregnate the female blossom ; the fruit of which will not otherwise swell to its full size, and the seeds will be abortive. The early plants under glass, not having the full current of natural air, nor the assistance of bees and other winged insects to convey the farina, the artificial aid of the cultivator is necessary to effect the impregnation. At the time of fructification, watch the plants daily : and as soon as the female flowers and some male blossoms are fully expanded, proceed to set the fruit the same day, or next morning at farthest. Take off a male blossom, detaching it with part of the footstalk. Hold this between the finger and thumb ; pull away the flower leaves, or petals, close to the stamens and antheræ, or central part, which apply close to the pistil in the bosom of the female flower, twirling it a little about, to discharge thereon some particles of the fertilizing powder. Proceed thus to set every fruit, as the flowers of both sorts open, while of a lively full expansion ; and generally perform it in the early part of the day, using a fresh male, if possible, for every impregnation, as the males are usually more

abundant than the female blossoms. By this management, the young fruit will be soon observed to swell freely."

Cucumbers attain the proper size for gathering in from fifteen to twenty days after the time of setting; and often in succession for two or three months or more, in the same beds, by good culture.

FORWARDING CUCUMBERS UNDER HAND-GLASSES.

If it be desired to have Cucumbers in the open garden at an early season, the plants may be raised in pots as before directed, and planted in a warm border either in the earth, or in hot-bed ridges. A hand glass should be provided for each hill, which must be kept close down every night, and in cool days, taking care to admit air when practicable. The plants may be hardened by degrees, by taking off the glass in the heat of the day, and as the weather gets warm they may be left to nature.

FORWARDING LETTUCE FOR USE IN WINTER.

Head Lettuce may be cultivated for use in the Winter season, by means of gentle hot-beds, or in cold-beds made in the manner recommended for the raising of early Cabbage plants, &c. (See article Cabbage.) For such Head Lettuce as may be wanted for use before Christmas, the Hardy Green, Dutch, and Egyptian Coss, are the most suitable kinds to sow; and plants may be raised in the open border by sowing seed two or three times between the middle of August and the first week in September. The plants from these sowings may be set out, about six inches apart, in cold-beds, when they are about one or two inches high.

In September and early in October, some of the Silesia, Sugar loaf, Butter Lettuce, or any other esteemed sorts, may be sown in a cold-bed frame, which, with the aid of ashes, will produce plants in from a month to six weeks;

these being planted in gentle hot-beds, in November and December, will produce Head Lettuce until a plentiful supply can be obtained from the open borders. The same attention is necessary, as respects the protection of these beds, as for other half hardy plants.

FORCING MUSHROOMS AT ALL SEASONS. }

The *Agaricus* is said to be the most extensive genus in the vegetable kingdom. The species are determined upon various principles. As some of the kinds are poisonous, it is necessary to describe the eatable Mushroom. Loudon says, it is most readily distinguished when of a middle size, by its fine pink or flesh-coloured gills, and pleasant smell. In a more advanced stage, the gills become of a chocolate colour, and it is then more apt to be confounded with other kinds of dubious quality ; but that species which most nearly resembles it, is slimy to the touch, destitute of fine odour, and have a disagreeable smell.

Again : the noxious kinds grow in woods, while the true Mushroom springs up chiefly in open pastures, and should be gathered only in such places.

Unwholesome *fungi* will sometimes spring up on artificial beds in gardens ; thus, when the spawn begins to run, a spurious breed is often found to precede a crop of genuine Mushrooms. The baneful quality of the toad-stool, *Agaricus cirrus*, is in general indicated by a sickly nauseous smell, though some hurtful sorts are so far without any thing disagreeable in the smell, as to make any criterion, drawn from that alone, very unsafe. The wholesome kinds, however, invariably emit a grateful rich scent. The *Agaricus campestris* is most generally cultivated. Dr. Withering mentions other eatable varieties, which run considerably larger, but which are inferior in flavor ; he says, " that a plant of the variety Georgia, was gathered in an old hot-bed at Birmingham, which weighed fourteen pounds, and Mr. Stackhouse found one fifty-four inches in circumference, having a stem as thick as a man's wrist."

Mushrooms may be obtained at any season of the year, by a proper regulation of the time and manner of forming the beds. A good crop is sometimes collected without making a bed on purpose, by introducing lumps of spawn into the top mould of old hot-beds.

The methods of procuring and propagating spawn, and of forming Mushroom beds, are numerous. Indigenous spawn may be collected in pasture lands in September and October, or it may be found in its strength and purity in the paths of mills worked by horses, or in any other horse-walks under shelter; it is frequently found in old hot-beds and dunghills, in the summer season, and Mushrooms of good quality may often be seen beginning to form themselves on the surface, like large peas; when these are observed, it is time to take out the spawn, which is generally in hard dry lumps of dung, the spawn having the appearance of whitish coarse pieces of thread. The true sort has exactly the smell of a Mushroom. If spawn thus collected, be required for immediate use, it may be planted in the beds at once, or it will keep three or four years, if laid to dry with the earth adhering to it, and afterwards placed in a warm dry shed, where there is a current of air; but if it be not completely dried, the spawn will exhaust itself or perish, as it will not bear the extremes of heat, cold, or moisture.

Such of my readers as may have hitherto been unacquainted with the cultivation of Mushrooms, must perceive, from the preceding remarks, that a Mushroom bed is simply a heap of animal dung and earth, so tempered as to be capable of producing and preserving spawn; but in order to have fruitful spawn at all times, it should be so formed as to be always at command. To this end, a quantity of fresh horse droppings mixed with short litter, should be collected; add to this one-third of cow dung, and a small portion of good earth, to cement it together; mash the whole into a thin compost, like grafting clay; then form it in the shape of bricks, which being done, set them on edge, and frequently turn them until half dry; then with a dibble make one or two holes in each brick, and insert in each hole a piece of spawn the size of an egg: the bricks should then be laid

where they can dry gradually. When dry, lay dry horse dung on a level floor, six or eight inches thick ; on this, pile the bricks the spawn side uppermost. When the pile is snugly formed, cover it with a small portion of warm fresh horse-dung, sufficient in quantity to diffuse a gentle glow through the whole. When the spawn has spread itself through every part of the bricks, the process is ended, and they may be laid up into any dry place for use. Mushroom spawn, made according to this receipt, will preserve its vegetable powers for many years, if well dried before it is laid up : if moist, it will grow, and soon exhaust itself.

Mushroom beds are often formed in ridges in the open air, covered with litter and mats, so as to prevent heavy rains exciting a fermentation ; and sometimes in ridges of the same sort under cover, as in the open sheds of hot-houses. They are also made in close sheds behind hot-houses, or in houses built on purpose, called Mushroom-houses. A moderately warm light cellar is peculiarly suited for the purpose in the Winter season, as no fire is necessary, and but little water, the application of which frequently proves injurious, when not judiciously managed. Mushrooms may be also raised in pots, boxes, hampers, &c. placed in warm situations, in old-beds, in pits with glazed frames, and in dark frames or pits.

The general way of making Mushroom beds, is to prepare a body of stable dung, moderately fermented, to the thickness of about a yard, more or less, according to the size and situation in which the bed is to be formed ; when the strong heat has subsided, an inch of good mould may be laid over, and the spawn planted therein in rows five or six inches apart ; after this is done, another layer of mould, an inch thick may be applied, and then a coat of straw. Beds well constructed, will produce Mushrooms in five or six weeks, and will continue to produce for several months, if care be taken in gathering, not to destroy the young ones. As Mushrooms are gathered, from time to time, the straw should be spread carefully over the bed.

Beds made in a convenient place where there is space all around, may be formed so as to make four sloping surfaces,

similar to the roof of a house ; this by being spawned on the four sides will yield abundantly. The celebrated Mr. Nichol makes his beds without spawn. The following are his directions, taken from Loudon's Encyclopædia of Gardening :

“ After having laid a floor of ashes, stones, chips, gravel, or brick-bats, so as to keep the bed quite dry, and free from under damp, lay a course of horse-droppings six inches thick. These should be new from the stables, and must not be broken, and the drier the better. They may be collected every day until the whole floor or sole be covered to the above thickness ; but they must not be allowed to ferment or heat. In the whole process of making up, the bed should be as much exposed to the air as possible ; and it should be carefully defended from wet, if out of doors. When this course is quite dry, and judged to be past a state of fermentation, cover it the thickness of two inches with light dry earth ; if sandy, so much the better. It is immaterial whether it be rich or not, the only use of earth here being for spawn to run and mass in. Now lay another course of droppings, and earth them over as above, when past a state of fermentation : then a third course, which, in like manner, earth all over. This finishes the bed, which will be a very strong and productive one, if properly managed afterwards.

Observe, that in forming the bed, it should be a little rounded, in order that the centre may not be more wet or moist than the sides. This may be done in forming the sole or floor at first, and the bed would then be of equal strength in all parts. If it be made up against a wall in a cellar, stable, or shed, it may have a slope of a few inches from the back to the front, less or more, according to its breadth. I have sometimes been contented with two courses as above, instead of three ; and often when materials were scarce, have made them up slighter, thus : three four-inch courses of droppings, with one inch of earth between each, and a two-inch covering at top. Such a bed as this, I have had produce for ten or twelve months together ; but very much depends on the state of the materials,

and on the care taken in making it up, also on the after management.

The droppings of hard-fed horses only are useful. Those of horses kept on green food will, of themselves, produce few or no mushrooms. I have made up beds from farm horses, fed partly on hard, and partly on green food, and from carriage or saddle horses, fed entirely on corn and hay; treated them in the same way in every respect; and have found, not once but always, those made from the latter most productive. Droppings from hard-fed horses may be procured at the public stables in towns, or at inns in the country, any time of the year; and if the supply be plentiful, a bed of considerable dimensions may be made and finished within five or six weeks. In as many more weeks, if in a stable or dry cellar, or a flued shed, it will begin to produce and often sooner; but if the situation of the bed be cold, it will sometimes be two or three months in producing Mushrooms."

It may be necessary to state further, that extremes of heat, cold, drought and moisture, should be avoided in the cultivation of Mushrooms. If the temperature keeps up to 50° in the Winter, the beds will be safe, and the heat in the beds may rise to 60 or even 70° without injury. Air also must be admitted in proportion to the heat, and 60° should be aimed at as a medium temperature. Water, when given a little at a time, is better than too much at once, after the spawn has begun to spread; and the water for this purpose should always be made blood warm. A light covering of straw may be always used to preserve moisture on the surface; and if the beds are made in open frames, or otherwise subject to exposure, the straw may be laid thicker than on beds made in a cellar.

Should beds fail in producing Mushrooms, after having been kept over hot or wet, it may be inferred that the spawn is injured or destroyed; but if on the contrary a bed that has been kept moderately warm and dry, should happen to be unproductive, such bed may be well replenished with warm water, and a coat of warm dung may be laid over the whole; if this does not enliven the bed after having lain a

mouth, take off the earth, and if on examination there is no appearance of spawn, the whole may be destroyed, but if on the contrary the bed should contain spawn, it may be renovated by covering it again, especially if any small tubercles be discernible; but if the heat should have declined, the spawn may be taken out and used in a fresh bed. If beds be formed in hot-bed frames under glass, some mats or straw must be laid over the glass to break off the intense heat of the sun.

Although only one species of *edible fungi* has yet been introduced into the garden, there are several eatable kinds. In Poland and Russia there are above thirty sorts in common use among the peasantry. They are gathered at different stages of their growth, and used in various ways; raw, boiled, stewed, roasted, and being hung up, and dried in their stoves and chimnies, form a part of their Winter stock of provisions. Great caution is necessary in collecting Mushrooms for food, and none but the Botanist should search for any but the sorts we have described.* Physicians say, "that all the edible species should be thoroughly masticated before they are taken into the stomach, as this greatly lessens the effects of poisons. When accidents of the sort happen, vomiting should be immediately excited, and then the vegetable acids should be given, either vinegar, lemon juice, or that of apples; after which, give ether and antispasmodic remedies, to stop the excessive vomiting. Infusions of gallnut, oak bark, and Peruvian bark, are recommended as capable of neutralizing the poisonous principle of Mushrooms." It is, however, the safest way not to eat any but the well known kinds.

* In order to ascertain whether what appear to be Mushrooms are of the true eatable kinds, sprinkle a little salt over the inner or spongy part; if, in a short time after, they turn yellow, they are unwholesome; but if black, they may be considered as genuine Mushrooms.

FORWARDING MELONS UNDER HAND GLASSES.

ALTHOUGH our citizens have an opportunity of procuring Melons without artificial aid, as their continuance is short, it may not be amiss to remind the gardener that the directions already given for maturing Cucumbers under glass will apply to Melons, with very few exceptions; care, however, must be taken that they be kept away from each other at the time of fruiting, as instances often occur of whole crops being entirely ruined, by plants of the same genus being raised too near each other. Those who wish to forward Melons, may prepare a hot-bed in March or April, to raise plants in; the bed may be formed and the plants managed in precisely the same manner as is directed for Cucumbers. If the ridging system be adopted, and a hand-glass applied to each hill, Melons may be obtained one month earlier than the usual time.

Gardeners raising Melons for the supply of city markets, may gratify the public by pursuing the forwarding, if not the forcing system. Ridges may be prepared in the following manner. In April or May, a trench may be dug in a warm border about two feet deep and three wide, and of sufficient length for as many hand-glasses as are intended to be employed, allowing three feet for every hill. Some good heating manure should be laid in the pits, managed the same as a common hot-bed; to this must be added good rich mould to the depth of eight or ten inches for the plants to grow in; as soon as the mould is warm, the seedlings may be planted, three plants in each hill, after which the hand-glasses should be set on, and shaded. After the plants have taken root and begun to grow, the glasses should be raised in fine days, and propped up so as to admit fresh air, and as the warm weather progresses, they may be taken off in the middle of fine days, so as to harden the plants gradually to the weather; and by the latter end of May they may be left to nature.

FORCING PEAS IN HOT BEDS.

THE best sorts of Peas to force, are the most dwarfish kinds, and the seed is better for being two or three years old, as they will bear earlier, and make less straw. Peas run less to vine by being transplanted, than when they are sown where they are to remain; the plants may be raised in a gentle hot-bed, either in the earth of the bed, or in pots or boxes. They do not require excessive heat; the temperature must be progressive; beginning at about 50° for the nursery bed, and from that to 60° or 65° for fruiting.

When the leaves of the plants are fairly expanded, they may be transplanted into rows from twelve to eighteen inches apart; observe, the earth in the fruiting bed should be from twelve to eighteen inches in depth.

As the Peas progress in growth, the earth should be stirred; and when six inches high, small sticks may be applied, so that the tendrils of the Peas may easily take hold; and they should be moulded at the bottom to enable them to support themselves.

When they appear in blossom, nip the top off; this greatly promotes the forming and filling of the pods; they will require to be regularly watered, and as the Spring advances they may be exposed to the weather, taking care to shelter them in the event of a sudden change.

FORCING POTATOES IN HOT-BEDS.

POTATOES may be forced in a great variety of ways. Those who attempt to mature Potatoes in frames, will of course provide such of the earliest kinds as are not inclined to produce large tops, the Broughton dwarf, Early mule, Nonpareil and the Oak, and the Ash-leaved, are of this description.

Potatoes may be forwarded in growth previous to their being planted in the beds, by placing them in a warm damp cellar. Some forward them in pots and boxes, and afterwards mature them in a hot-bed; others plant them in the

bed at once, in which case the bed should be moulded from fifteen to twenty inches deep, and the heating materials should be sufficient to keep up a moderate heat for two or three months.

Perhaps the most convenient way to force Potatoes in this climate, is to provide pots for the purpose; plant one set in each pot in January, set them in a warm cellar till a bed can be prepared in February, in this put in the pots. While the tuberous roots are forming, and before they fill the pots, prepare the beds for maturing them, and then bury them in the mould with the balls of earth attached to them.

The beds should be kept free from frost, and air should be given at every opportunity. The common round Potatoes may be forwarded, by laying them thick together in a slight hot-bed in March, and when they are planted in the borders, a quantity of comb-maker's shavings may be deposited in each hill; this will greatly promote their growth.

FORWARDING RADISHES, &c.

RADISHES may be obtained early in the Spring by means of a moderate heat. The earth in the frame should be a foot in depth, and should be admitted every day after they are up, on which they incline more to tops than roots. If they come up too early, they should be thinned to one or two inches apart. Give gentle waterings as occasion requires, and keep them well covered in cold nights.

For raising early Radishes, without frames, hot-beds may be made in ridges, and arched over with hoop bends, or pliant rods, which should be covered with mats constantly at night, and during the day in very cold weather. In moderate days, turn up the mats at the warmest side; and on a fine mild day, take them wholly off, and harden them gradually to the weather.

Turnips, Carrots, Onions, or any kind of salads, or pot herbs, may be raised in the same way by sowing the seed in drills, and keeping the ground clear of weeds.

FORWARDING RHUBARB.

THOSE who may desire to have this excellent substitute for fruit at an early season, may procure it without much trouble. It is customary with some persons in the Southern parts of England to keep this plant growing in their kitchens, so that they may have it for use at any time. They have strong neat boxes, made for the purpose; about three feet deep and two wide, and in length according to the demand, from four to eight feet; these being kept clean, have the appearance of flour-bins, and they are sometimes so contrived as to have shelves over them in imitation of a kitchen dresser. The plants being taken up out of the garden towards Winter, are placed as close at the bottom of the box as they can be put, with their crowns level: and some sand being thrown over sufficient to fill up the interstices, and to cover the crowns about half an inch, finishes the operation. No further trouble is necessary, except to give a little water, just to keep the roots moist, as they need no light at all; and if the roots be planted in the garden when Spring opens, they will, after having taken root, vegetate as strongly as before they were removed.

Roots of Rhubarb taken up in the Autumn, and packed in sand deposited in a warm cellar, will produce stalks earlier than if kept in the garden, and if added to hot-beds they will yield abundantly, and that at a very early season.

The consumption of this plant in the British metropolis may be judged of by the following extract from a London Gardener's Magazine. "Rhubarb, which has for some years past been cultivated, is still a subject of increasing interest, and more extensively in demand than ever. On the fifth of May, no less than eight waggon loads, each weighing at least a ton, with an equal quantity in smaller proportions, were sold in Covent-garden market alone. One cultivator, Mr. Myatt, of New Cross, Deptford, had three waggon loads; he has, I believe, nearly twenty acres of it under culture. This plant contains an acid as fine as the Gooseberry, for pies and tarts; a square rod of ground will supply a family; and it may be used till midsummer or later. For fuller explanations, see article Rhubarb.

FORWARDING SALAD HERBS, SMALL PLANTS, &c.

For the purpose of raising Mustard, Cress, and other salad herbs, also Egg-plants, Tomatoe-plants, &c. in small quantities, a hot-bed may be made, early in the Spring, of good heating materials, on the top of which may be laid leaf mould, old tan, or light compost, to the depth of about nine inches. The various kinds of seeds may be sown in boxes or flower pots, and plunged in the top mould up to their rims, and by being well attended to, a supply of small salads, as well as small seedling plants, may be raised without much labour or difficulty. This method is also well calculated for the raising of Annual flower plants at an early season.

FORWARDING TOMATOES.

As this vegetable has become highly appreciated of late years for its excellent qualities, it may be necessary here to observe, that plants raised from seeds sown in hot-beds the latter end of February, or early in March, as directed in former pages, will grow to the length of four inches and upwards, by the first of April, which is one month earlier than they can with safety be trusted in the open garden. If a few of these be pulled from the hot-bed, and transplanted into flower pots, they may be kept growing therein until settled warm weather, and then turned out and deposited in the ground with the balls of earth entire; or a fruiting bed may be prepared by the first of April, in the manner recommended for Bush Beans, Cucumbers, &c., and the plants inserted in the earth at once; these will produce ripe fruit a month or six weeks earlier than those cultivated in the ordinary way.

The following simple method of forcing vegetables on a small scale, is recommended by a correspondent of a London Magazine:—

“Mushrooms in Winter I obtain by a very simple though not a new process. Provide boxes three feet long, and one foot eight inches deep; a quantity of horse droppings, perfectly dry; some spawn and some light dry soil. Fill the boxes by layers of droppings, spawn, and soil, which must be trodden perfectly tight; repeat these triple layers till the boxes are full, and all trodden firmly together.

“Four such boxes at work, are sufficient for a moderate demand; and of a dozen, four brought on at a time, and placed upon the flue of a greenhouse stove, will produce a fine supply. The surface of these portable beds may be covered with a little hay, and occasionally, though sparingly, watered. It is not absolutely necessary that they be set on the flue of a greenhouse; a warm stable, cellar, or any other similar place, will suit equally well. This plan is also convenient for affording a plentiful stock of superior spawn.

“The same sized boxes will also do for Asparagus; but for this purpose a sufficient stock of three-year old plants must be at hand; also eighteen boxes, four of which are the necessary set to be forced at one time for a middling family. Half fill the boxes with decayed tanner's bark, leaf mould, or any similar mould; on this, pack the roots as thickly as possible, and fill up the boxes with the bark, &c. Any place in a forcing house will suit them; on the flue, under the stage, or in short, any place where they can enjoy the necessary degree of heat. Besides Asparagus and Mushrooms, Sea Kale, Buda Kale, Angelica, small salad, as also other pot herbs, may be raised in the same manner.”

Those who have not the conveniences recommended in a greenhouse, &c. may place the boxes in a hot-bed. The glasses being laid on, and the beds covered at night, will soon promote the growth of the plants, and produce vegetable luxuries at a season when garden products in general are comparatively scarce.

It is unnecessary to show of how much value such processes may be in minor establishments, or in a young country. I wish it to be understood, that in order to the successful cultivation of some of the rare vegetables I have treated of, great pains must be taken in every stage of their growth. If the advice I have given be attended to, I flatter myself we shall soon obtain a supply of many of these luxuries of the garden. My directions are founded on the success attending the practice of some of the best gardeners in this country. I have also had sufficient experience to warrant me in this attempt to contribute my mite towards the attainment of this kind of useful knowledge.

METHOD OF CULTIVATING THE HOP.

HOUBLON. *Humulus lupulus*.

ALTHOUGH the Hop is not a culinary vegetable, as it is more or less used in every part of our country, it may not be amiss to treat of its culture. It is presumed, that in proportion as habits of temperance are inculcated, our citizens will have recourse to beer as a wholesome beverage ; and as a great deal depends on the manner in which Hops are cured, I propose giving directions for their management throughout, so as to enable those who choose, to prepare their own. My information is collected chiefly from London's Encyclopædia of Plants.

"The Hop has been cultivated in Europe an unknown length of time for its flowers, which are used for preserving beer. Its culture was introduced from Flanders in the reign of Henry the Eighth ; though indigenous both in Scotland and Ireland, it is little cultivated in those countries, owing to the humidity of their autumnal season. Like other plants of this sort, the Hop bears its flowers on different individuals ; the female plants, therefore, are alone cultivated. There are several varieties grown in Kent and Surrey, under the name of Flemish, Canterbury, Goldings, &c. ; the first is the most hardy, differing little from the

Wild or Hedge Hop; the **Goldings** is an improved and highly productive variety, but more subject to blight than the other.*

The Hop prefers a deep loamy soil on a dry bottom; a sheltered situation, but at the same time not so confined as to prevent a free circulation of air. The soil requires to be well pulverized and manured previous to planting. In Hop districts the ground is generally trenched either with a plough or spade. The mode of planting is generally in rows six feet apart, and the same distance in the row. By some, five, six, or seven plants, are placed in a circular form, which circles are distant five or six feet from each other. The plants or cuttings are procured from the most healthy of the old stools; each should have two joints or buds: from the one which is placed in the ground springs the root, and from the other the stalk. Some plant the cuttings at once where they are to remain, and by others they are nursed a year in a garden. An interval crop of Beans or Cabbage is generally taken the first year. Sometimes no poles are placed at the plants till the second year, and then only short ones of six or seven feet. The third year the Hop generally comes into full bearing, and then from four to six poles from fourteen to sixteen feet in length are placed to each circle, or one pole to each plant, if cultivated in straight rows. The most durable timber for poles is that of the Spanish Chesnut.

The after culture of the Hop consists in stirring the soil, and keeping it free from weeds: in guiding the shoots to the poles, and sometimes tying them for that purpose with bass or withered rushes; in eradicating any superfluous shoots which may rise from the root, and in raising a small heap of earth over the root to nourish the plant.

Hops are known to be ready for gathering when the chaffy capsules acquire a brown colour, and a firm consistence.

* Besides these are the Farnham, or golden grape, which is cultivated for an early crop; and for late picking, the Mayfield grape, or ruffler, is esteemed, which is a dwarfish variety. Great caution is necessary, lest the varieties get mixed, as they will not ripen or dry equally, and consequently cannot be of one uniform colour and quality.

Each chaffy capsule, or leaf calyx, contains one seed. Before these are picked, the stalks are detached, and the poles pulled up, and placed horizontally on frames of wood, two or three poles at a time. The Hops are then picked off by women and children. After being carefully separated from the leaves and stalks, they are dropped into a large cloth hung all round within the frame on tenter hooks. When the cloth is full, the Hops are emptied into a large sack, which is carried home, and the Hops laid on a kiln to be dried. This is always to be done as soon as possible after they are picked, or they are apt to sustain considerable damage, both in colour and flavour, if allowed to remain long in the green state in which they are picked. In very warm weather, and when they are picked in a moist state, they will often heat in five or six hours; for this reason, the kilns are kept constantly at work, both night and day, from the commencement to the conclusion of the Hop-picking season.

The operation of drying Hops is not materially different from that of drying malt, and the kilns are of the same construction. The Hops are spread on a hair cloth, from eight to twelve inches deep, according as the season is dry or wet, and the Hops ripe or immature. When the ends of the Hop stalks become quite shrivelled and dry, they are taken off the kiln, and laid on a boarded floor till they become quite cool, when they are put into bags.

The bagging of Hops is thus performed: in the floor of the room where Hops are laid to cool, there is a round hole or trap, equal in size to the mouth of a Hop-bag. After tying a handful of Hops in each of the lower corners of a large bag, which serve after for handles, the mouth of the bag is fixed securely to a strong hoop, which is made to rest on the edges of the hole or trap; and the bag itself being then dropped through the hole, the packers go into it, when a person who attends for the purpose, puts in the Hops in small quantities, in order to give the packer an opportunity of packing and trampling them as hard as possible. When the bag is filled, and the Hops trampled in so hard that it will hold no more, it is drawn up, unloosed from the hoop,

and the end sewed up, two other handles having been previously formed in the corners in the manner mentioned above. The brightest and finest coloured Hops are put into pockets or fine bagging, and the brown into coarse or heavy bagging. The former are chiefly used for brewing fine ale, and the latter by the porter brewers. But when Hops are intended to be kept two or three years, they are put into bags of strong cloth, and firmly pressed so as to exclude the air.

The stripping and stacking of the poles succeed to the operation of picking. The shoot or bind being stripped off, such poles as are not decayed, are set up together in a conical pile of three or four hundred, the centre of which is formed by three stout poles bound together a few feet from their tops, and their lower ends spread out.

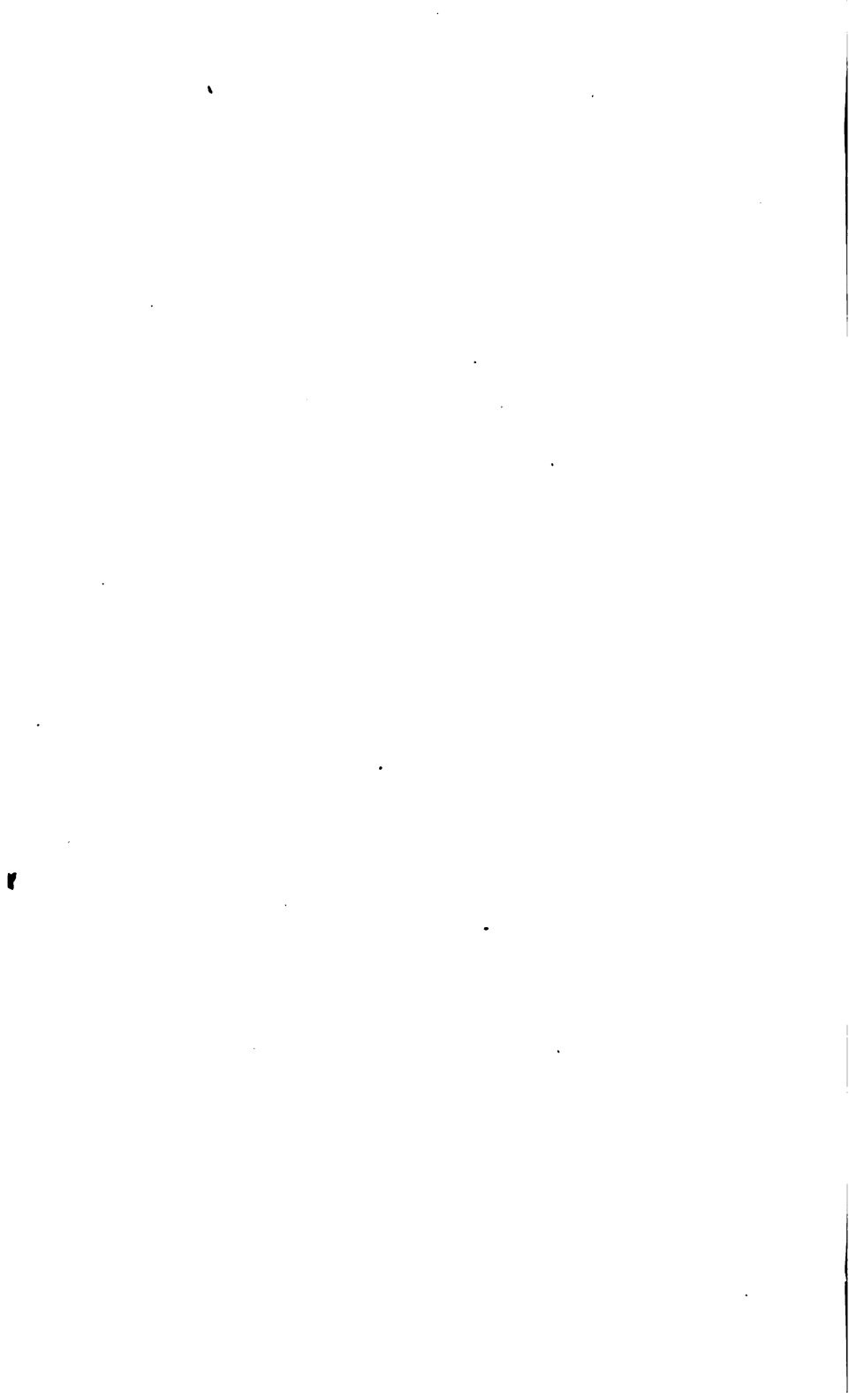
The produce of no crop is so liable to variation as that of the Hop; in a good season an acre will produce 20 cwt. but from 10 to 12 cwt. is considered a tolerable average crop. The quality of Hops is estimated by the abundance or scarcity of an unctuous clammy powder which adheres to them, and by their bright yellow colour. The expenses of forming a Hop plantation are considerable; but once in bearing, it will continue so for ten or fifteen years before it requires to be renewed. The Hop is peculiarly liable to diseases; when young it is devoured by fleas of different kinds; at a more advanced stage, it is attacked by the green fly, red spider, and ottermoth, the larvæ of which prey even upon the roots. The honey-dew often materially injures the Hop crop; and the mould, the fire-blast, and other blights, injure it at different times towards the latter period of the growth of the plant."

It appears from an article in the "Genesee Farmer," that the culture of Hops is becoming an important branch of husbandry in the State of New-York. A correspondent observes, that "as fine samples have been grown in Orange and Madison counties as in any part of the world. The Hop is considered somewhat precarious; but when the season is good, the profit is very great. The average product may be stated at 700 lbs., though it has reached 1600 lbs.

to the acre; and in the latter case the expense amounted to sixty dollars. The ordinary, or average price, may be stated at eighteen cents per pound. The profits on an ordinary crop, according to these assumed data, would be about seventy dollars from the acre. It often falls materially short of this, however, from the want of knowledge and care in gathering and drying the crop.

“The quantity of Hops taken to Albany and the neighbouring towns on the Hudson, this year, (1834) has been estimated at 2,300 bales, or 500,000 lbs., which, had not many of them been prematurely gathered, or badly cured, would have yielded to the growers ninety or a hundred thousand dollars. But of the 2,300 bales, there was not more than 200 bales, we are informed, that ought to have received the denomination of first sorts. Many of them were picked too early, before the matter that imparts to them their value was sufficiently developed; and others were scorched or smoked in curing. This carelessness has seriously affected the character of our Hops abroad, and they are no longer purchased by the Philadelphia brewers. They would soon form an important article of export, if their character was raised by care in their culture and drying, and a rigid inspection.”

The young shoots of both wild and cultivated Hops are considered by some as very wholesome, and are frequently gathered in the Spring, boiled, and eaten as Asparagus. The stalk and leaves will dye wool yellow. From the stalk a strong cloth is made in Sweden, the mode of preparing which is described by Linnæus in his *Flora Suecica*. A decoction of the roots is said to be as good a sudorific as Sarsaparilla; and the smell of the flowers is soporific. A pillow filled with Hop flowers will induce sleep, unattended with the bad effects of soporifics, which require to be taken internally.



OBSERVATIONS

ON THE

FLOWER GARDEN.

PREVIOUS to forming a flower garden, the ground should be made mellow and rich, by being well pulverized, manured, and prepared in every respect as if intended for a kitchen garden. A flower garden should be protected from cold cutting winds by close fences, or plantations of shrubs, forming a close and compact hedge, which should be neatly trimmed every year. Generally speaking, a flower garden should not be on a large scale, the beds or borders should in no part of them be broader than the cultivator can reach, without treading on them: the shape and number of the beds must be determined by the size of the ground, and the taste of the person laying out the garden.

Much of the beauty of a pleasure garden depends on the manner in which it is laid out; a great variety of figures may be indulged in for the flower beds. Some choose oval or circular forms, others squares, triangles, hearts, diamonds, &c., intersected with winding grass paths and gravel walks. In the design of an ornamental garden, nature should be imitated as nearly as practicable, not only in the formation and regulation of the flower beds, but in the adaptation of each species to its peculiar element, soil, and situation, taking into consideration, that the inmates of a garden constituting as they do a mingled groupe, collected from all the different climates and soils of the vegetable creation, require each their most essential aliment, to promote a luxuriant growth.

Neatness should be the prevailing characteristic of a flower garden, which should be so situated as to form an ornamental appendage to the house ; and, where circumstances will admit, placed before windows exposed to a southern or south-eastern aspect. The principle on which it is laid out, ought to be that of exhibiting a variety of colour and form, so blended as to produce one beautiful whole. In a small flower garden, viewed from the windows of a house, this effect is best produced by beds, or borders, formed on the side of each other, and parallel to the windows from whence they are seen, as by that position the colours show themselves to the best advantage. In a retired part of the garden, a rustic seat may be formed, over and around which grape vines, or honeysuckles, and other sweet and ornamental creepers and climbers, may be trained on trellises, so as to afford a pleasant rural retreat.

In extensive pleasure grounds a rockery, formed of rough stone, and rich light soil, may be erected in imitation of a mountain, on which may be cultivated various plants natives of mountainous districts, and such indigenous plants as are calculated for the situation, also herbaceous plants, procumbent and trailing, such as *Mesembryanthemums*, Climbing *Cordyialis*, the various species of *Silene*, or Catch Fly, *Gypsophila*, *Lotus*, *Ricota* or Syrian *Honesty*, *Godetia*, &c. These being interspersed with dwarf plants of different species, as Mountain *Lychnis*, Violets, Daisies, &c., and so arranged as to cover a great proportion of the rocky surface, must necessarily produce a very pleasing effect.

Although the greatest display is produced by a general flower garden, that is, by cultivating such a variety of sorts in one bed or border, as may nearly insure a constant blooming ; yet bulbous plants, while essential to the perfection of the flower garden, lose something of their peculiar beauty when not cultivated by themselves. The extensive variety of bulbous roots furnishes means for the formation of a garden, the beauty of which, arising from an intermixture of every variety of form and colour, would well repay the trouble of cultivation, particularly as by a judicious

selection and management, a succession of bloom may be kept up for some length of time. As, however, bulbous flowers lose their richest tints about the same time that annuals begin to display their beauty, there can be no well-founded objection to the latter being transplanted into the bulbous beds, so that the opening blossoms of the annuals may fill the place of those just withered, and continue to supply the flower-beds with all the gaiety and splendour of the floral kingdom.

The cultivation of Annual Flowers is a delightful employment, and well adapted to the amusement of a Lady, who, with the assistance of a labourer to prepare the ground, may turn a barren waste into a beauteous flower garden with her own hands. Sowing the seeds, transplanting, watering and training the plants, tying them to sticks as props, leading them over trellis work, and gathering their seed, are all suitable for feminine occupation, and from their affording motives for exercise in the open air, they contribute greatly to health, and tranquillity of mind.

But the taste of the florist will be exercised to little purpose, in the selection of Flowers, if strict attention be not paid to the general state of the garden. If there are lawns or grass walks, they should be frequently trimmed, and more frequently mowed and rolled, to prevent the grass from interfering with the flower-beds, and to give the whole a neat, regular, carpet-like appearance. If there are gravel walks, they should be frequently cleaned, replenished with fresh gravel, and rolled. Box, and other edgings, should be kept clear of weeds, and neatly trimmed every Spring. Decayed plants should be removed, and replaced with vigorous ones from the nursery bed. Tall flowering plants must be supported by neat poles or rods; and all dead stalks and leaves from decayed flowers must be frequently removed.

In the summer season, all kinds of insects must be timely destroyed, and in the evenings of warm days, the flowers will require frequent watering.

INTRODUCTION TO THE CATALOGUE OF
ANNUAL FLOWER SEEDS.

To raise your flowers, various arts combine ;
 Study these well, and fancy's flight decline.
 If you would have a vivid, vigorous breed,
 Of every kind, examine well the seed:
 Learn to what ELEMENTS your plants belong,
 What is their constitution, weak or strong ;
 Be their physician, careful of their lives,
 And see that every species daily thrives ;
 These love much AIR, these on much HEAT rely,
 These without genial MOISTURE, droop and die.
 Supply the wants of each, and they will pay
 For all your care through each succeeding day.

WITH a view to render this work more generally interesting, a classification and definition of the various species and varieties embraced in the annexed Catalogue, is attempted. Precision, however, in the performance of this task is impracticable, as it must be conceded that the vegetable family, having been collected from all the varied climates and soils, will differ as to height, complexion, time of blossoming, and in many other essential points, when cultivated out of their natural element.

Some seeds germinate in two or three days after being deposited in the earth ; other species will not exhibit signs of vegetation under as many weeks. These and other distinguishing features arise, in a great measure, from their having originated in diverse soils and climates. Natives of cool or temperate climates and moist soils, are generally tardy in germinating when cultivated in a warm climate and dry soil, for want of a due share of their most essential aliment, MOISTURE ; and natives of warm climates and light soils, require artificial culture in cool seasons, and unpropitious climates, in order to their being accommodated with their natural and most important aliment, HEAT. AIR is also a more necessary aliment to some species than to others, but these three elements collectively, constitute

the food of plants in general. It may be also observed that the adaptation of plants to a soil congenial for them, is of the utmost importance ; as plants cannot thrive well, when improper food is absorbed by their roots.

Under favorable circumstances, annual flower plants, in general, will produce their flower buds within two months from the period of sowing the seed. Some species, soon after exhibiting their brilliant blossoms, disappear, while others embellish the borders by their successional bloom for two or three months. An assortment of seed judiciously selected, and sown in due season, will afford amusement to the cultivator the greater part of a summer, and yield seed for the propagation of the species in succeeding years, if gathered when ripe, and carefully preserved.

Annual plants will grow from one to four feet in height, in one uniform soil and situation, but as these are diversified in almost every garden, no correct conclusion can be drawn ; an attempt, however, has been made in the annexed catalogue, to describe the various species as nearly as possible, which may serve as a guide to the gardener in planting ; the most dwarfish being adapted to the front or outer edge of the borders, and others in regular gradation.

Those species marked thus, § are tender. Those marked thus, * should be sown in the spot where they are intended to blossom, as they are apt to droop and die by being transplanted. A few are marked thus, †. These though cultivated as annuals, from their facilities in blossoming and ripening their seed the first season, are in reality perennial, as are also some other varieties from warm climates, usually denominated annuals ; but as such could not be cultivated at all by those who have no means of protecting their plants through our severe winters, they may with great propriety be treated as tender annuals, by sowing the seed every Spring.

§ Denotes tender. † Perennial. * Difficult to transplant.

HEIGHT
IN FEET

Love lies bleeding, crimson.	<i>Amaranthus melancholicus</i>	2 to 3
Lunaria, purple.	<i>Lunaria purpurea</i>	1 to 2
*Lupins, dwarf annual, yellow, purple, rose, two coloured, &c.	<i>Lupinus nanus, densiflorus, bi-color, etc.</i>	1 to 2
Maesherbia, blue.	<i>Maesherbia coronata</i>	2 to 3
*Malope, tall scarlet	<i>Malope grandiflora</i>	3 to 4
*Malope, dwarf crimson, rose.	<i>Malope trifida, malacoides</i>	1 to 2
Marigold, African, yellow, orange.	<i>Tagetes erecta</i>	3 to 4
Marigold, French, variegated.	<i>Tagetes patula</i>	2 to 3
Marigold, sweet, yellow striped	<i>Calendula officinalis</i>	1 to 2
§Marigold, Fig. yellow	<i>Mesembryanthemum, annuus</i>	1
Martynia, or, Cuckold's Horn.	<i>Martynia proboscidea</i>	2 to 3
†Marvel of Peru, or Four O'Clocks, white yellow, red, striped, scented	<i>Mirabilis jalapa, lutea, rubra, striata, longiflora, etc.</i>	2 to 3
†Mignonette, sweet scented.	<i>Reseda odorata</i>	under 1
†Monkey Flower, yellow, scarlet, rose, &c. variegated,	<i>Mimulus moschatus, cardinalis, rivularius, roseus, etc.</i>	1 to 2
§Nierembergia, several varieties of various colours.	<i>Nierembergia intermedia, violacea, phœnicia, etc.</i>	2 to 3
Nolana in varieties, blue.	<i>Nolana paradoxa, prostrata, etc.</i>	1 to 3
*Oats, animated.	<i>Avena sensitiva</i>	2 to 3
†Pansey or Heart's Ease, purple, blue, yellow, and numerous shades, variegated.	<i>Viola, tri-color, grandiflora, atro purpurea, cœrulea, lutea, etc.</i>	under 1
Pentaptes, scarlet.	<i>Pentaptes phœnicia</i>	3
Phlox, annual, rosy red.	<i>Phlox Drummondii</i>	1 to 2
Pimpernel, blue and scarlet.	<i>Anagallis indica, arvensis</i>	1
*Poppy, large white and scarlet.	<i>Papaver somniferum, coccinea</i>	3 to 4
*Poppy dwarf, scarlet white, yellow, striped, Persian red, &c.	<i>Papaver rhæas, nudicale Persicum, rubra, striata, etc.</i>	1 to 2
Prince's Feather, crimson.	<i>Amaranthus hypocondriacus</i>	2 to 3
Rocket Candytuft white.	<i>Iberis coronaria</i>	1 to 2
Rose Champion, annual, dwarf red, purple, white, striped, &c.	<i>Agrostemma, cæli rosea, githago, lutea, etc.</i>	1
Salpiglossis, variegated, purple, &c.	<i>Salpiglossis, atro pupurea</i>	2 to 3
Saphonaria or Silene, rose	<i>Saphonaria vaccaria</i>	2 to 3
†Schizanthus in variety, orange, wing-leaved, &c.	<i>Schizanthus retusus, pinnatus, obtusi folia, etc.</i>	1 to 2
Scabious, or Morning Bride, purple	<i>Scabiosa atro purpurea</i>	2 to 3
§Sensitive Plant, red	<i>Mimosa sensitiva</i>	under 1
Shortia, yellow.	<i>Shortia Californica</i>	1 to 2
Stock Gilly, Virginian, lilac.	<i>Malcomia maritima</i>	1
Strawberry Spinach, red fruit.	<i>Blitum capitatum</i>	1 to 2
Strephtanthus, rose coloured.	<i>Strephtanthus obtusi folius</i>	2 to 3

	§, Delicate tender. † Perennial, * Difficult to transplant	HEIGHT IN FEET
Sunflower, yellow.	<i>Helianthus annuus</i>	6 to 8
Sunflower dwarf, yellow.	<i>Helianthus minor, nanus</i>	2 to 3
Sun Rose, spotted.	<i>Helianthemum guttatum</i>	1 to 2
*Sweet Balm, blue.	<i>Melissa odoratum</i>	1 to 2
*Sweet Basil, bluish, lilac.	<i>Ocimum basilicum</i>	1 to 2
Sweet Sultan, white, yellow, purple	<i>Centaurea moschata, etc.</i>	1 to 2
*Ten Week Stock, scarlet, purple, white, &c.	<i>Mathiola annua var. græca tenella etc.</i>	1 to 2
§Tobacco in varieties, scarlet, yellow	<i>Nicotiana, tabacum rustica</i>	3 to 4
Touch me not, yellow.	<i>Noli mi tangere</i>	1
Trefoil, crimson and scented.	<i>Trifolium incarnatum, etc.</i>	3 to 4
*Venus' Looking Glass, lilac.	<i>Campanula speculum</i>	1 to 2
Vesicaria in varieties, yellow.	<i>Vesicaria grandiflora, etc</i>	2 to 3
†Verbena in varieties, scarlet, rose, blue, lilac, pink, &c.	<i>Verbena aubletia, bonariensis, Drummondii pulchella, etc.</i>	1 to 2
Zinnia, scarlet, yellow, violet coloured, red, &c.	<i>Zinnia coccinea, latea, grandiflora rubra, etc.</i>	2 to 3

The following are climbing and trailing plants, which should be planted in situations, where they can be supported by poles, twine, or trellises.

The tallest growing vines and creepers are best adapted to the covering of arbours, to create shade, or conceal any unsightly object; the procumbent trailing and low climbing plants, such as the Nasturtium, Loasa, Petunia, Sweet Pea, &c. may be trained on trellis work of an ornamental form, as that of a fan, balloon, or pyramid, which should be on a scale corresponding to the situation and extent of the garden.

Balloon Vine, or Love in a Puff	<i>Cardiospermum halicacabum</i>	over 10
§Balsam, Apple and Pear	<i>Momordica balsamina</i>	over 10
Bean Hyacinth, white and purple	<i>Dolichos alba, purpurea</i>	over 10
§Bean, scarlet flowering	<i>Phaseolus multiflorus</i>	over 10
Bean, Castor Oil or Palma christi.	<i>Ricinus Communis</i>	5 to 6
§Cypress Vine, scarlet and white	<i>Ipomæa coccinea, alba,</i>	over 10
Gourd, Mock Orange, in varieties	<i>Cucurbita bicolor, aurantia</i>	over 10
Gourd the Bottle, in varieties.	<i>Cucurbita lagenaria, elavata</i>	10
§Loasa or Chillian Nettle, orange	<i>Loasa lateritia, aurantiaca etc</i>	3 to 6
§Morning Glory, scarlet striped, &c.	<i>Ipomæa coccinea, striata, etc</i>	over 10

Morning Glory, of the Convolvulus tribe, purple, striped, yellow, pink, white, &c.	<i>Convolvulus major, purpurea, cærulea, striata, lutea, incarnata, alba etc</i>	over 10
Nasturtium, orange and crimson variegated.	<i>Tropæolum atrosanguineum nana etc</i>	4 to 6
§Thunbergia, wing-leaved, purple	<i>Thunbergia alata</i>	4 to 6
†Petunia, purple, white rose &c.	<i>Petunia nyctaginiiflora, etc.</i>	2 to 3
Sweet Peas, various complexions, white, purple, red, rose, striped &c.	<i>Lathyrus odoratus, var. alba, purpurea, rosea, striata, etc.</i>	3 to 4

As many city gardens are so limited as not to admit of an extensive assortment of flowers, a select list may be made from the above catalogue to suit the taste of such as may be so situated ; and amateurs, who cultivate on a larger scale, can obtain such additional sorts as may be desired at the different seed stores, under their various names.

Previous to providing annual flower seeds, the cultivator should lay out a plan of his garden, and in making allotments of ground for any particular purpose, provision should be made for a select assortment of such bulbous, tuberous, and perennial plants, as may be deemed most worthy of attention, not forgetting to leave room for some of the choicest varieties of the Dahlia, the qualities of which will be described hereafter.

Another consideration is, to have suitable implements ready, so that the work may be performed in a skilful manner, and at the proper season. A spade, rake, hoe, trowel, drilling machine, and pruning knife, may be deemed essentials ; and in order to have the beds laid out, with the edges straight and even, a garden line should be in readiness. If labels should be required, they may be made of shingles, which being split into strips of about an inch wide, and sharpened at one end, will serve for marking distinct kinds, either in pots, or on the borders. In order to have the names or numbers written in legible characters, the labels should be painted on the smooth side with white lead, and then marked with black lead pencil before the paint gets dry ; inscriptions made in this way, will be as durable as the label itself.

The next, and perhaps the most important consideration, is, to have the ground in good condition to receive the seed. In order to obtain this desirable object, let some good rich compost, or very old manure, be provided and well mixed with the soil; dig it a full spit deep, pulverizing every particle. It would be an advantage if the ground could be dug to a great depth at the clearing up of Winter, and then again at the period of sowing seed in the Spring :

"I come, I come—ye have called me long —
I come o'er the mountains with light and song !
Ye may trace my steps o'er the wakening earth,
By the winds which tell of the Violet's birth,
By the Primrose-stars in the shadowy grass,
By the green leaves opening as I pass."

A mellow loam, which is a medium earth between the extremes of clay and sand, enriched with pulverized manure or compost, is adapted to the generality of flowering plants; ground however of a boggy nature, composed of black earth, decayed leaves, &c., and in a low situation, is essential to the luxuriant growth of amphibious plants, as Water Lilies, Iris, Lobelia, and the like, but as the cultivator has not always a choice, he may select such plants only, as are most congenial to his peculiar soil and situation.

Previous to digging flower beds or borders, care must be taken that they be so arranged as to lay rather highest in the middle; this is essential to the draining off a redundancy of water, as well as to the exhibition of plants to the greatest possible advantage.

All kinds of annual flower seeds may be sown in the month of April and May, on borders or beds of pulverized earth; the beds should be levelled, and the seeds sown either in small patches, each kind by itself, or in drills from an eighth to half an inch deep, according to the size or nature of the seed. Lupins, Peas; &c., should be planted about half an inch deep. Those who would have their plants to flower early, should sow the hardy kinds the last week in March, or early in April. Those varieties marked thus †, and thus § may be sown in boxes, or pots of light earth, at the same time. These, if exposed to the sun every day, and

sheltered in cold nights, will be forwarded in growth and be fit to transplant early in June. Those marked *, may be also sown in small pots, and as these plants do not bear transplanting, they should be turned out of the pots with the balls of earth entire, and placed in the ground where they are intended to flower; or, if the seed be sown in a bed with other kinds, they should be carefully transplanted with a trowel, without disturbing their roots.

The most eligible way to obtain early flowers is to prepare a slight hot bed for the tender kinds, (see calendar for January) and either to plunge the pots therein up to their brims, or to sow the seed in the earth in shallow drills, not more than a quarter of an inch deep. It may be necessary to state that although in favourable seasons, flower seed in general will come up in from one to three weeks after it is sown, the seed of Cypress vine will not grow until settled warm weather, unless in a hot bed; it should then be partially scalded in water, previous to sowing it.

If some of the hardy annuals be sown in September, they will grow large enough to survive the Winter, by a slight covering of straw or litter; and if plants thus raised be transplanted early in the Spring, they will produce very early flowers. The following are some of the hardiest:

Alyssum, sweet	Evening Primrose
Coreopsis, in varieties	Larkspur, in varieties
China aster, in varieties	Pansy, or Heart's ease
Catch fly	Poppy, in varieties
Chrysanthemum, in varieties	Rocket Larkspur.

To prevent disappointment, I would recommend that great care be taken to keep the seed beds as clear from weeds as possible. It cannot be denied but young plants are apt to get smothered, and sometimes pulled up with weeds. To obviate this, I would suggest that the seeds be sown in shallow drills, each kind by itself, and that an account be kept of the contents of each drill in a book; also of all seeds that are sown at different times, and by being particular in the dates, you may always know when to expect your plants to come up. Those persons who may be totally unacquainted with plants, will, by this means, be enabled to

identify each particular kind, and thus become familiarly acquainted with them.* In order that this may be rendered plain to my readers, I adopt the following plan of entry of six kinds sown in pots, and six in the open ground:

April 20, sowed flower seeds in pots.

Pot marked A, or 1, *Amaranthus tricolor*.

B, or 2 *Balsamines*'

C, or 3, *Cockscomb*.

D, or 4, *Egg plant*.

E, or 5, *Ice plant*.

F, or 6, *Mignonette*.

These pots may be either marked with letters, or figures on the outside, to answer with the book, or notches may be cut in wood, or other labels affixed to the pots, and entered accordingly.

April 30, sowed flower seeds in drills, as under

No; 1, *Bladder Ketmia*

2, *Coreopsis Tinctoria*.

3, *Yellow eternal flower*.

4, *Globe amaranthus*.

5, *Princes' feather*.

6, *Larkspur, branching*.

If these numbers be continued to 100, or even 1000, there can be no mistake, provided the rows are all marked accord-

* Lest the reader should contend that the author is hereby shifting his own duty and responsibility on the cultivator, it may be necessary to observe that a definition of all the peculiar qualities, forms, attitudes and habits of growth, of the numerous species and varieties of plants, embraced in an extensive catalogue, with minute directions for the most appropriate culture of each, would alone occupy more space than is allotted for this treatise, and that to expatiate on all the various features of the floral kingdom, is a task which no author has ever attempted; nor can any library be found containing such a desideratum.

The cultivator of a small garden may, however, by means of a memorandum book, describe the peculiarities of such plants as come under his special care, as upright, procumbent, trailing, climbing, bushy, slender stalked, herbaceous, shrubby, &c., and thus learn how to cultivate and arrange the same, or similar plants, advantageously in succeeding years: and it must be admitted that a few flowers selected, so as to harmonize in their colours and habits of growth, cultivated with precision, as respects soil and situation congenial to them, and trained and pruned into regular and compact shapes, will yield more pleasure and amusement, than three times the number taken promiscuously and cultivated under one uniform treatment, as is the general, though not most judicious practice.

ing to the entry in the book ; or if No. 1 be noted, plain sticks will answer afterwards, if one be stuck at each end of every row. In this case it would be well to leave a space every ten or twenty rows, and to note the number of the rows ; by this means, they can be more easily traced.

Some species of dwarf Annuals, such as the sweet Alyssum, Candytuft, *Clarkia Pulchella*, *Mignonette*, *Pimpernell*, and such others as grow not over a foot in height, may be cultivated in small beds, either separate or two or three kinds mixed together. *Clarkia pulchella* suits very well with *Mignonette*, as it will thrive in moderately poor soil, which is the best adapted for that plant when fragrance is an object. The reason that some *Mignonette* has scarcely any scent, is, because the soil in which it is cultivated is too rich ; and this leads me to remark farther, that what some call Tree *Mignonette*, and admire on account of its fragrance, is the same variety as the ordinary kind, cultivated as a perennial plant. It may be propagated by cuttings, and trained so as to form a tree ; which being transplanted into poor ground, will yield more fragrance than when grown as an annual in a rich compost or soil.

The best way to manage the mixed species, is to level down a narrow border of rather poor soil, and sow it all over with *Mignonette*, then with *Clarkia pulchella* ; when the plants are up, both kinds should be thinned out equally, so as to leave the plants from one to two inches apart all over the bed ; these when they come into blossom will form a rich mass, and have a very pretty effect, the bushiness of the *Mignonette* hiding the naked stalks of the *Clarkia*. The White Alyssum and Purple Candytuft, form a pleasing contrast when mixed in equal proportions, and also the Dwarf Scarlet and blue *Pimpernell*.

The new species of Dwarf annual *Phlox*, *Phlox Drummondii*, are described in a London Magazine as a splendid sight when cultivated in patches. "Every flower, though of the deepest carmine, has its petals of a pale blush colour on the under side, and every petal though of the palest pink, has a dark carmine spot at its base. Thus the variety of

colours displayed in a bed of these flowers, almost exceeds description, and when they are seen under a bright sun, and agitated by a gentle breeze, the effect is extraordinarily brilliant."

When seeds are intended to be sown in patches, which is often done for want of an unoccupied border, the best way to perform this business is, after having pulverized the soil, to impress circular drills in the surface with the rim of a flower pot, which may be large or small, according to fancy. By sowing seeds in such circular drills, the plants can be more easily traced than when scattered promiscuously over the ground, and the weeds can be destroyed with less risk and trouble. Such kinds as are marked in the catalogue* may remain as sown, or if parted, they should be removed with a scoop trowel in a careful manner, in small tufts, and this business, as well as transplanting in general, should be always done immediately preceding, or after rain, and in cloudy weather.

Herbaceous plants in general will not flower well, if grown in clusters; they should, therefore, be thinned or transplanted into the regular beds, at all favourable opportunities, after they get about an inch in length; and as there is always a risk of some plants not taking root, it is safest to plant a few of each sort every time, taking care to diversify the colours, and also to leave a few plants in the seed beds, for the purpose of substituting in the room of such plants whose period of flowering may be over; as is the case generally with early Perennial plants and bulbs, at about the season the last of the Annuals are fit to remove.

The transplanting may be done with a small trowel, or a neat dibble made for the purpose.

		HEIGHT IN FEET
† Denotes tender. || Biennial. * See 1 unattainable.		
Cassia Maryland, yellow	<i>Cassia Marylandica</i>	3 to 4
†Carnation Pink, various colours	<i>Dianthus caryophyllus</i>	1 to 2
*†Celcia, red & yellow, variegated	<i>Celcia orientalis</i>	1 to 2
Chinese Imperial Pink, various	<i>Dianthus Chinensis</i>	1 to 2
†Chinese Primrose, lilac. white	<i>Primula Chinensis</i>	under 1
Clove Imperial Pink, crimson	<i>Dianthus hortensis</i>	1 to 2
†Colutea, scarlet	<i>Sutherlandia frutescens</i>	2 to 3
*Coreopsis, Perennial, in varieties, yellow	<i>Calliopsis grandiflora, lanceolata, auriculata, etc.</i>	2 to 3
*†Coronilla, yellow	<i>Coronilla glauca</i>	2 to 3
*Coronet, or double Lychnis, scarlet	<i>Lychnis coronata</i>	2 to 3
||Clary, purple topped	<i>Salvia sclara</i>	1 to 2
Columbine, various colours	<i>Aquilegia vulgaris</i>	1 to 2
-*†Daisy Garden, various colours	<i>Bellis perennis, hortensis, under</i>	1
Dragon's head, bluish pink	<i>Dracocephalum Virginianum</i>	3 to 4
Dragon's head, purple and striped	<i>Dracocephalum argemense, etc.</i>	1 to 2
European Globe Flower, yellow	<i>Trollius Europæus</i>	2 to 3
||Evening Primrose, yellow	<i>Oenothera biennis</i>	3 to 4
Eupatorium, blue, white	<i>Eupatorium cerulea, etc.</i>	2 to 3
||Foxglove, purple, white	<i>Digitalis purpurea, alba</i>	3 to 4
Fraxinella, red, white	<i>Dictamnus rubra, alba</i>	1 to 2
Gentian, purple, yellow, white	<i>Gentiana purpurea, lutea, etc.</i>	1
Gentian, porcelain flowered	<i>Gentiana adscendens</i>	2 to 3
†Geranium, various colours	<i>Pelargonium zonale</i>	2 to 3
Globe Thistle, purple	<i>Echinops sphærocephalus</i>	2 to 3
†Hepatica, blue, pink	<i>Anemone hepatica</i>	under 1
Hibiscus, pink, white, purple	<i>Hibiscus palustris, speciosus, etc.</i>	3 to 4
Hollyhock Antwerp, China and English, of various colours	<i>Althea flora Chinensis, Anglica, etc.</i>	4 to 5
||Honesty, or Satin flower, bluish	<i>Lunaria biennis</i>	2 to 3
†Indian Shot, yellow, scarlet	<i>Canna Indica, lutea, coccinea</i>	2
Ivy-leaved Toad Flax, pink	<i>Lunaria cymbalaria</i>	1 to 2
Jacob's Ladder, blue	<i>Polemonium ceruleum</i>	1 to 2
†Jerusalem Cherry, red fruit	<i>Solanum pseudo, capsicum</i>	2 to 3
Larkspur, Perennial, purple, pink, white, &c.	<i>Delphinium grandiflorum, perennans</i>	2 to 3
*Liatris, long spiked, purple	<i>Liatris spicata, elegans, etc.</i>	3 to 4
*Lily of the Valley, white	<i>Convallaria majalis</i>	1
†Lupin, Perennial, blue, white, changeable, &c.	<i>Lupinus perennis, mutabilis, variabilis, etc.</i>	2 to 3
Lychnidea, or American Phlox, lilac, purple, red, white, &c.	<i>Phlox paniculata acuminata pyramidalis odorata, etc.</i>	3 to 4
*Lychnidea, early, pink, &c.	<i>Phlox subulata, stolonifera, etc.</i>	1 to 2

† Denotes tender. || Biennial. * Seed unsatisfactory.		HEIGHT IN FEET
* <i>Lychnis</i> Mountain, variegated	<i>Lychnis Alpina</i>	1 to 2
<i>Lychnis</i> Scarlet	<i>Lychnis Chalcidonica</i>	3 to 4
London Pride, variegated	<i>Dianthus deltoides</i>	1
† <i>Mesembryanthemum</i> , variegated, yellow, white, purple, &c.	<i>Mesembryanthemum acinaciforme, spectabile, tricolor, etc.</i>	1 to 2
† Mexican Sage, scarlet	<i>Salvia Splendens</i>	2 to 3
Monkshood, white, blue, &c.	<i>Aconitum album, versicolor, etc.</i>	4 to 6
Monkey flower, yellow, purple spots	<i>Mimulus ringens, luteus, etc.</i>	1 to 2
† Oleander, pink, white	<i>Nerium, Oleander</i>	2 to 3
* <i>Pardanthus</i> , Chinese; orange	<i>Pardanthus, Chinensis</i>	2
Pentstemon, purple	<i>Pentstemon, campanulata</i>	2 to 3
Perennial Flax, purple	<i>Linum, perennis</i>	2 to 3
† Periwinkle, Madagascar, rose, white	<i>Vinca rosea, alba</i>	1 to 2
Pink, Pheasant-eyed, variegated	<i>Dianthus plumarius</i>	under 1
† Polyanthus, variable and splendid	<i>Primula polyanthus</i>	under 1
Poppy, Perennial, red, yellow	<i>Papaver orientale, bracteata</i>	2 to 3
Potentilla, rose, puce, yellow	<i>Potentilla formosa, splendens</i>	1 to 2
† || Pyramidal Bell flower, blue	<i>Campanula pyramidalis</i>	3 to 4
* Queen of the Meadows, white, rose	<i>Spiræa ulmaria, lobata, etc.</i>	3 to 4
* Ragged Robin, or Red Lichnis	<i>Agrostemma flos cucula</i>	1 to 2
Rocket Garden, purple	<i>Hesperis matronalis</i>	2 to 3
|| Rose Campion, or Mullen Pink, rose, white, &c.	<i>Agrostemma coronata, rosea, alba, etc.</i>	2 to 3
Rudbeckia, yellow, purple	<i>Rudbeckia, lutea purpurea</i>	3 to 4
Saponaria, rose blush	<i>Saponaria officinalis, etc.</i>	1 to 2
* Saxifrage, rose, white, purple	<i>Saxifraga umbrosa, crassifolia, l.</i>	
|| Snapdragon, white, red, variegated, in several splendid varieties	<i>Antirrhinum bicolor, versicolor, coccinea, spartium, etc.</i>	1 to 2
Sophora, white, blue, &c.	<i>Sophora alba, australis</i>	2 to 3
† || Stock Gilliflower, numerous varieties, scarlet, white, purple, striped	<i>Mathiola incana coccinea, alba, purpurea, striata, etc.</i>	1 to 2
* Sunflower, yellow	<i>Helianthus perennis, altissimus</i>	3 to 4
|| Sweet Scabious, purple, brown	<i>Scabiosa atro purpurea, etc.</i>	2 to 3
Sweet William, various colours	<i>Dianthus barbatus</i>	1 to 2
* Thrift, pink and red	<i>Statice vulgaris, speciosa, under 1</i>	
Valerian, Garden, red, white	<i>Valeriana rubra, alba</i>	2 to 3
Valerian, Sweet-scented, blue	<i>Polemonium cerulea</i>	3 to 4
Veronica, variegated, blue	<i>Veronica variegata, cerulea</i>	2 to 3
* Violet, Fragrant, white, blue, &c.	<i>Viola odorata, alba, cerulea, under 1</i>	
† || Wallflower, bloody, yellow	<i>Cheiranthus cheiri</i>	1 to 2
* † Wallflower, double perennial	<i>Cheiranthus perennis</i>	1 to 2
† || Wall-leaved; Stock Gilliflower	<i>Cheiranthus glaber</i>	1 to 2
* Windflower, various colours	<i>Anemone coronaria</i>	1 to 2

	† Denotes tender.	‖ Biennial.	* Seed unobtainable.	HEIGHT IN FEET
Yucca, or Adam's Needle, white				3 to 4
			<i>Yucca stricta, gloriosa, etc.</i>	

CLIMBING PLANTS.

For other lists of Climbing Plants, see Catalogue of Flowering and Ornamental Shrubs, also the Catalogue of Annuals.

Calampelis, orange	<i>Eccremocarpus scabra</i>	over 6
†Climbing Cobea, dark purple	<i>Cobea scandens</i>	over 20
Everlasting Peas, pink,	<i>Lathyrus latifolius, rosea,</i>	over 10
‖French Honeysuckle, white, red	<i>Hedysarum coronarium, etc.</i>	over 6
†Passion Flower, various colours	<i>Passiflora incarnata, etc.</i>	over 20

The reader is here reminded that our catalogue of Annual flower seeds, contains a few varieties of Perennials, which were there introduced because of their aptness to blossom in the first season from the sowing of seeds; these with those marked † in the last catalogue, may be sown and treated in the manner recommended for the tender Annuals. Those intended to be cultivated as greenhouse plants, should be taken up before the approach of cold weather, transplanted into flower pots, and sheltered either in a garden frame, greenhouse, or light room. Those plants with tuberous roots, such as Dahlias, Marvel of Peru, and also some others of the Bean and Pea tribe, may be cut down late in the Autumn; the roots may be then taken up and preserved in the same manner as those of other tuberous and bulbous-rooted plants, of which I shall treat hereafter.

Hardy Biennial and Perennial flower seeds may be sown in the month of April, in shallow drills. If this business be performed in the manner recommended for Annuals, they can be easily distinguished from each other; and as these plants do not flower the first year, they may be thinned out, or removed from the seed beds as soon as they are well rooted, and planted either into different parts of the flower beds, or in a nursery bed. If the latter plan be adopted,

they should be planted in rows a foot or more apart, and kept free from weeds by means of a small hoe, which will greatly promote their growth, and prepare them for transplanting into the regular and permanent blossoming beds, either in the Autumn or early in the ensuing Spring.

It may be here observed that Biennials seldom serve the second Winter to flower in perfection, unless they are renewed by cuttings of top shoots, young flower stalks, or casual offsets, layers, &c. It will be unnecessary to take this trouble, unless it be with any extraordinary double-flowering plants. Some of the Perennials may be increased by root offsets detached from the old plants, and planted in Spring or Autumn; others by bottom suckers and slips of top shoots, layers, pipings of young shoots, &c. Pinks, Sweet Williams Pansies and double Violets, also Periwinkle, or running Myrtle, and many other similar plants, may be increased by simply laying their branches an inch or two under the surface in July and August. After roots have formed, which may be expected in six or eight weeks, each tuft or plant may be transplanted into the borders.

Many sorts of Biennial and Perennial flower seeds may be sown in September, or as soon as ripe; and if the plants get strong before the setting in of Winter, some of them will flower the Summer next ensuing. The following are amongst the hardiest:

Adonis, Spring-flowering.
Alpine Columbine.
Alyssum, yellow.
Bee, larkspur.
Columbine, in varieties.
Evening Primrose.
Fox-glove, in varieties.
Fraxinella.
Hollyhock, in varieties.

Lychnis, in varieties
Larkspur, perennial.
Rose Campion, in varieties.
Rocket, in varieties.
Scabious, in varieties.
Valerian, Garden.
Veronica.
Everlasting Peas. } climbing
Virgin's Bower. }

It may be necessary here to remind the reader of those species of beautiful double-flowering Perennial herbaceous plants, which do not produce seed; some of these are included in our Catalogue, they may be obtained at the nurseries, and should be introduced into the regular flower

beds, either in Autumn or early in the Spring; the mode of increasing such, is by layers, cuttings, offsets, &c. detached from the old plants.

As the earth within the flower beds will need to be fresh dug and replenished with good compost or manure, once in two or three years, it may be necessary to take up all the Perennial plants at such times. Such roots as may be overgrown, should be deprived of their surplus offsets, and may be either planted in a nursery bed, or returned with the parent plants into the regular flower beds; they should be inserted a little deeper than before, and the fine fresh earth distributed well about the fibres.

In removing plants into the beds where they are intended to blossom, great pains should be taken to preserve some of the earth to their roots. The ground should be previously brought into good condition, so that they may strike freely, and produce their flowers in perfection. The plants should be so arranged that they may all be seen, the most dwarf may be placed in front, and others in a regular gradation to the tallest behind; or the tallest may be planted along the middle of the beds, and the others on each side according to their varied heights and colours.

There is no part of gardening which requires so much elegance of taste and fancy, as in setting off a border or bed of intermixed flowers to advantage. In assemblage with other flowers, the different kinds of hardy bulbs may be planted in small clumps of six, seven, or eight inches in diameter, three, four, five or more roots in each, according to their size and growth, and these at suitable distances from one another. Likewise observe to diversify the kinds and colours, so as to display when in bloom, the greatest possible variety of shades and contrasts.

If Greenhouse plants be plunged into the flower borders in the month of May, they will not only tend to ornament the garden, by their diversity of foliage and blossom, but the roots will receive a more uniform supply of moisture, than if the pots were openly exposed to the sun and wind: care

should however be taken to give the different species a situation suitable for them.* Hydrangeas, Primulas, Daisies, Oleanders, Cammelias, China Roses, and half hardy plants in general, thrive best in a moderately shaded situation. Geraniums, Jasmines, Helotropes &c., may be plunged in a sunny situation, provided they be regularly supplied with water. Many species planted for ornament in the flower

* In some countries, the wealthy have *changeable flower gardens*; the principal of which consists in the power of changing its production at pleasure, so that whenever any plant or group of plants, begin to decay, they can be removed, and their places supplied by others coming into bloom. To admit this, a large reserve-nursery is requisite, in which the plants must be kept in pots, and removed and plunged in the borders as wanted. Sir W. Chambers informs us that the Chinese excel in this mode of gardening; and that he has known a mandarin (or noble) have the whole furniture and style of his parterre changed in a single night, so as next morning to present not only a different description of flowers, shrubs, and dwarf trees, but a different arrangement of the beds and compartments. Something of the same kind is practised in the gardens of the Tuilleries, in Paris; in some of the imperial gardens at Petersburg, and in the vice-royal gardens at Monza. Gardens of this description admit of a very perfect arrangement of the flowers, whether in the mingled manner, in select groups, or according to the natural method. It is only with such resources that a flower-gardener can "paint his way," as Sir W. Chambers says the Chinese artists do, "not scattering their flowers indiscriminately about their borders, but disposing of them with great circumspection along the skirts of the plantations, or other places where flowers are to be introduced. They reject all that are of a straggling growth of harsh colors and poor foliage, choosing only such as are of some duration, grow either large or in clusters, are of beautiful forms, well leaved, and of tints that harmonize with the greens that surround them. They avoid all sudden transitions, both with regard to dimension and colour, rising gradually from the smallest flowers to those of the boldest growth; and varying their tints, by easy gradations, from white, straw-colour, purple, and incarnate, to the deepest blues, and most brilliant crimsons and scarlets. They frequently blend several roots together, whose leaves and flowers unite, and compose one rich harmonious mass; such as the white and purple candytuft, larkspurs, and mallows of various colours, double poppies, lupins, primroses, pinks, and carnations; with many more of which the forms and colours accord with each other; and the same method they use with flowering shrubs, blending white, red, and variegated roses together, purple and white lilacs, yellow and white jasmines, altheas of various sorts, and as many others as they can with any propriety unite. By these mixtures they increase considerably the variety and beauty of their compartments. In their large plantations, the flowers generally grow in the natural ground; but in flower-gardens, and all other parts that are highly kept, they are in pots buried in the ground, which, as fast as the bloom goes off, are removed and others are brought to supply their places; so that there is a constant succession for almost every month in the year; and the flowers are never seen but in the height of their beauty."—*Loudon's Encyclopedia of Gardening*.

borders, may at the same time be propagated by layers. The *Fuchsia* or Ear-drop, Passion Flower, Heliotrope, Carnation, Petunia, running Verbena, &c., will if layed in June and July, exhibit their blossoms in perfection, and yield young plants fit to transplant into flower pots in September and October.

It may be observed further that established plants will always produce their blossoms earlier and stronger in the Spring, than those recently transplanted; it should, therefore, be an object with gardeners to do the business of forming permanent flower beds, and of transplanting hardy Perennial and Biennial plants in September or October.

The hardy bulbous roots must be also planted in October, or November, which on being properly preserved through the Winter will embellish the parterre in Spring by their early and FIRST FLOWERS.

"First flowers of the Spring time,
Bright gems of the year,
All love'y and blooming,
How fresh ye appear;
Springing up in the garden,
The hedge row and vale,
Enriched by the showers,
And fann'd by the gale."

In my preliminary observations, I directed the attention of my readers to some important points respecting walks, edgings, &c.—Although box is superior to any thing else for edgings; yet in extensive gardens, dwarf plants of various kinds may be used for such purpose. Thrift is the neatest small evergreen next to box; but Violets, Pinks, Periwinkle, Pansey, Iris, Stone crop, or even Parsley, Thyme, Strawberry plants, &c. may be used for the sake of diversity. These will require frequent watering and trimming, and the Thrift, &c. should be sometimes taken up, divided at the roots and replanted.

Box edgings will also require frequent pruning and trimming; and once in from seven to ten years the whole may

be taken up, divided and replanted, and the surplus slips may be planted in a nursery bed in rows about a foot apart; these will be suitable for making edgings the year following.

Flower-beds should be kept free from weeds, and watered occasionally in the Summer. In the Autumn they should be covered with leaves, straw or light litter; this should be taken off in the Spring, and the ground should be hoed and dressed in such a manner as to enliven the earth around the roots of the plants, as also to give the whole a neat appearance.

FLOWERING AND ORNAMENTAL SHRUBS.

Arbrisseaux d'Ornement.

SHRUBS are so closely connected with flowering plants, and indeed so many of them are embellished with flowers, that they may be considered as essential to the completion of an ornamental garden. They are all Perennial, and are divided into two classes, deciduous and evergreen; the former lose their leaves in the Winter. the latter only shed them when others are ready to supply their places.

Shrubs are not only necessary to the embellishment of a flower garden, but many kinds are eligible for hedges to it, and may be planted at a trifling expense. These hedges should be frequently trimmed and trained, the sides cut, even and the tops sparingly clipped, so as to make them ornamental, as well as useful, and also to increase the vigour of their growth. When hedges become open or naked at the bottom, they should be plashed down; this is done by cutting the branches half through near the ground; they will then bend easily, and may be interwoven with the adjoining branches.

When shrubs, creepers, or climbers, are planted against walls or trellises, either on account of their rarity, delicacy, or to conceal a rough fence, or other unsightly object, they require different modes of training; some attach themselves

Cydonia Japonica, or *Pyrus Japonica*, a very beautiful scarlet-flowering shrub, from Japan, has not been in cultivation here for many years. It is found to be very hardy, resisting our most severe frosts; it is evergreen, flowers very early, and continues a long time. A second flowering takes place in the latter part of the Summer. It is every way a desirable shrub.

Daphne mezereum, one of our most early flowering shrubs, which blooms freely in April and May, and is very sweet-scented. It is rather tender in some situations, but will stand our ordinary Winters very well in a sheltered situation.

Dirca palustris, or Leather wood; a pretty little shrub, growing very regular in shape, and has the appearance of a large tree in miniature; it is a native of our Northern States; the flowers, which appear very early in the Spring, are yellow, and come out before the leaves.

Gymnocladus Canadensis, or Kentucky Coffee tree. The berries have a resemblance to coffee, and are said to be a good substitute for it; however, it is a beautiful tree, with handsome feathered leaves, and makes a fine contrast with others. It should be planted in the back or the centre of the plantation, and is very hardy.

Halesia diptera, and *Halesia tetraptera*, two-winged and four-winged Silver Bell, or Snow-drop tree. They are both natives of the Southern States, but are perfectly hardy here; our most severe Winters do not hurt them. The former kind flowers in April, and the latter withholds its blossoms until May. They are elegant shrubs.

Hibiscus Syriacus, *fl. pleno*. The double-flowering *Althea frutex*, of which there are several varieties; the double white, double red, double red and white, and striped, are the most showy; they commence their flowering late in July, and continue until Autumn. The single kind, of which there are many varieties, are scarcely worth cultivating, the double ones being raised quite as well, and are equally hardy. These are indispensable in every plantation.

Hypericum frutescens, Shrubby Hypericum. There are several species of this small beautiful shrub, all natives of

the Southern States, but perfectly hardy here. They all flower profusely in the Summer, and continue for a long time. They should be planted in the front row.

Kerria Japonica, or *Corchorus Japonica*, yellow Japan Globe flower; although a native of Japan, like many other Japanese flowers, it is perfectly hardy here. It flowers in the greatest profusion at all times, except in the very dead of Winter, and will grow almost in any soil or situation.

Kæhreuteria paniculata, Japan bladder tree, or *Kæhreuterius*. This is another hardy shrub from Japan. It has long racemes of flowers, succeeded by bladder-like fruit, and is worthy of cultivation in every good collection.

Ligustrum vulgare, virens. Large European Privet, a very handsome evergreen shrub, flowering profusely in June, and produces bunches of black round berries. It bears slipping well, and is therefore well calculated for hedges, or to enclose ornamental plantations. It grows quick, and is well adapted to our climate, and when planted in a hedge-row, and kept clipped, it makes a beautiful hedge, and ought to be in more general use.

Philadelphus coronarius, or common Syringa, is very ornamental, producing its sweet-scented flowers early in the Spring, and in abundance.

Philadelphus inodorous, and *P. grandiflorus*, Garland Syringa, are both natives of the Southern States, but quite hardy here. Their flowers are large, and continue for several months, in wreaths or garlands. They are well calculated for the centre row, and also to hide unsightly objects, and have a beautiful effect when mixed with monthly honeysuckles, &c.

Persica, or *Amygdalus Persica, fl. rosea pleno*, or double-flowering Peach, is very beautiful in shrubberies. It blossoms early, and sometimes bears fruit, but it is cultivated entirely for its beautiful blossoms. A few trees of the Chinese double-flowering Apple, (*Pyrus spectabilis*,) have also a beautiful effect.

Rhus cotinus, Venetian sumach, Aaron's beard, sometimes called fringe tree, is a fine shrub, calculated for the centre of the clump or shrubbery. Its large branches of

fringe remaining all the Summer, give it a curious and striking effect.

Ribes Missouriensis, or Missouri currant; there are two species of this very ornamental shrub from Missouri, introduced by Lewis & Clarke; they are quite hardy, and flower profusely from April to June.

Robinia glutinosa, and *Robinia hispida*; the former a pretty large shrub, producing fine bunches of flowers in great abundance throughout the Summer; the latter is a smaller shrub; both of them are, however, worthy of a place in large collections.

Robinia pseudo-acacia, or Yellow Locust tree.* This is superior to any other kind of wood for ship-tunnels, mill-cogs, and fence-posts, as well as for various other purposes. Its culture is very easy, and may be propagated in great abundance, by sowing the seed in March, April, or May, in a bed of good sandy loam, which is its favorite soil, and covering half an inch deep. Previous to sowing, put the seed in a basin, pour on scalding water, and let it stand all night; pick out such seeds as are swollen, and plant them immediately; next evening repeat the same process with such as did not swell the first night, mix the whole and sow them; they will come up in the course of the following month numerously; for no seeds grow more freely, notwithstanding what some say to the contrary. When the plants are a year old, transplant them out of the seed bed into nursery rows, four feet distant, and plant from plant, one foot. Having two or three years' growth in these rows, they may be planted successfully in any warm and tolerably rich sandy ground. They may also be propagated by suckers, which they throw up abundantly, especially if some of the wide-extending roots be cut through with an axe. An acre of these trees, planted at two feet distant each way, will contain 10,890; at four feet distant, 2,722; and it is said that no appropriation of land is more lucrative than that devoted to this purpose. The Three-Thorned Acacia Seed (*Gleditschia*) should be prepared in the same manner.

* This tree is introduced here, rather on account of its usefulness than beauty, though the latter is very considerable.

Rosa, or *Roses*, a very numerous variety of these; some reckon five or six hundred kinds. They are accounted the most beautiful of Flora's productions. Perhaps a handsome collection might be made of about fifty of the best sorts, which, by taking such quantity, I suppose might be obtained at about fifty cents each, under name; and, generally, a fine collection unnamed at half that amount. No good garden or shrubbery should be without them.

Sorbus aucuparia, Mountain Ash, or Roan tree. This is a very beautiful shrub of the larger size; the leaves are ornamental; the flowers and fruit, which are produced in large bunches, are beautiful; the fruit remains till late in the Autumn; it is a native of Europe.

Sorbus Canadensis. This is a native of our Northern frontiers and mountains; it does not grow so large as the former; the berries are smaller and red, the former larger and of an orange colour, but otherwise much resemble it.

Spartium junceum, *Genista*, etc. Two or three species of Broom, producing numerous bunches of yellow flowers in May and June; the *Genista*, or Spanish Broom, which has white flowers, is also very pretty, but not quite so hardy as the former.

Symphoria racemosa, or Snow-berry, sometimes called St. Peter's wort, a pretty little shrub; the bunches of wax-like white berries, which it produces during the whole Summer, give it a beautiful appearance.

Syringa vulgaris, or common Lilac, blossoming in May, is well known to all, and needs no comment. The white variety is not quite so common—they are only used for outside plantings, as they sucker very freely, and soon make themselves common.

Syringa Persica, or Persian Lilac, is a delicate low shrub, the flowers very abundant, and the leaves small and delicate. There are two varieties of the Persian Lilac; the white flowering, and the blue or purple flowering.

The *Chinese* cut-leaved Lilac is very curious; the leaves are cut like Parsley, the flowers growing in longer racemes than the former.

Siberian, or large Persian Lilac. The bunches of flowers

are very large, and continue in season a long time after the common Lilac.

Tamarix Gallica, or French Tamarix, and the *Tamarix Germanica*, German Tamarix, are two pretty shrubs ; the leaves and branches are small and slender, producing quantities of beautiful flowers, which form a very striking contrast to the other part of the shrubbery.

Viburnum opulus, or Guelder rose, otherwise called Snow-ball, is a very showy shrub, producing large balls of snow-white flowers in May ; and is indispensably necessary to every shrubbery.

Vitex agnus castus, or Chaste tree, a pretty and singular shrub, flowering the most part of the Summer.

CLIMBING PLANTS.

Ampelopsis hederacea. This plant, on account of the largeness of its leaves, and rapidity of its growth, is well adapted for covering walls. There are several species, all resembling the vine in habit and flower.

Aristolochia sipho. Birthwort, or Dutchman's pipe. A very curious blooming plant, with extraordinary large foliage, well calculated for an arbour ; affording a dense and cooling shade.

Atragene alpina. A free-growing deciduous shrub, with small pinnated foliage, and large blush-coloured flowers, which continue from May to July.

Bignonia crucigera, is a desirable evergreen ; being of a luxuriant growth. It will cover in a few years an area of fifty feet ; and bloom from May to August ; colour orange.

Bignonia radicans, or Trumpet creeper, produces large bunches of red trumpet-shaped flowers, in July and August.

Bignonia grandiflora, is much like the former in habit and appearance, but the flowers are much larger. It is said to be a native of China, and the former a native of this country. They are both perfectly hardy, and will climb up brick work or wooden fences, without any assistance.

Clematis, or *Virgin's Bower*. There are several species, some of them tender, or not sufficiently hardy for our severe

Winters, without protection. The *Clematis azurea*, *bicolor* and *flama*, are splendid varieties. The *Clematis Virginica*, *Viorna*, *Viticelli*, and *Vitalba*, are perfectly hardy, and blossom throughout the Summer.

Glycine Sinensis, or *Wistaria Sinensis*, is a handsome Chinese creeper of recent introduction, from China, and is not yet common in our nurseries. It is a beautiful vine, running to a great height, and loaded with long racemes of purple flowers throughout the Summer.

Glycine frutescens, or *Wistaria frutescens*. This beautiful brother of the Chinese kind, is a native of our Southern States, grows much in the same way as the others, and perhaps not inferior. Although this fine creeper has been long known in England, we have not heard much about it by English writers; the conclusion seems to be, that it does not flower well in England. In fact, none of our Southern plants do well in that country, while those from China do very well—here, however, it is quite the reverse. I have the Chinese *Wistaria Sinensis*, from fifteen to twenty feet high, and the American *Wistaria* about the same height. The Chinese does not look so vigorous and green as his American brother.—The American *Wistaria* should be planted in every garden with other creepers, or to run up the trees in shrubberies, according to its natural position.

Hedra Helix. Irish Ivy, is a desirable evergreen for covering naked walls, or any other unsightly object. The leaves are of a lively green, and from three to five angled. There are several varieties of it; all calculated for growing in confined shady situations, where plants in general will not thrive.

Jasminum officinale. Garden Jasmine. This delicious climbing shrub, has from time immemorial, been common in Europe for covering arbours. Its delicate white fragrant flowers render it very desirable; but it is rather tender for our Northern Winters, unless well protected. In the Southern States, this plant, and also the yellow Jasmine, *revolutum*, grow luxuriantly and bloom profusely, and even *Jasminum grandiflora* will endure the Winters of South Carolina and Georgia.

Lonicera, comprehending all the fine sweet-scented honeysuckles. Of the Italian kinds, the monthly honeysuckle is decidedly superior, continuing to flower all through the Summer, until late in Autumn, and is very fragrant. Some of the other European kinds may be occasionally introduced into large shrubberies. There is a white honeysuckle lately introduced from France, denominated *Hedysarum coronarium*, which is in great repute. Two or three American kinds deserve particular notice.

Lonicera semper virens, or Coral Trumpet; monthly honeysuckle, is extremely beautiful, flowering the whole of the Summer, with its thousands of scarlet bunches; it is, however, destitute of scent.

Lonicera Fraseri, also an American: the flowers are like the other kind in almost every particular, except colour, this being a bright yellow.

Lonicera, pubescens, or *Caprifolium pubescens*, a large and beautiful honeysuckle from the North-west coast; the flowers are large, and of a bright copper colour, inclining to orange—they are all perfectly hardy.

Lonicera flexuosa—Chinese honeysuckle, of late introduction; it is perfectly hardy, withstanding our most severe frosts without the least injury; it is a very sweet-scented honeysuckle, grows rapidly, and to an immense height. It flowers in pairs and threes all up the branches, covering the whole plant completely with flowers. It blossoms in Spring and Autumn, and is a very valuable acquisition to our gardens and shrubberies.

Lonicera Japonica, or Japan honeysuckle. This bears flowers in great profusion, which are white, afterwards becoming of a light yellow. It is not so hardy as the Chinese, and requires a little protection in the Winter.

Passiflora, or Passion Vine. There are several hardy species, but the best is the *Passiflora incarnata*; this, although it dies to the ground every Winter, will, during the Summer, grow from twenty to thirty feet, and yield abundance of beautiful purple flowers.

Periplaca græca, or Silk Vine. A prolific climber, wood slender, twining and elastic, leaves, smooth, ovate, lanceolate.

Established plants will grow thirty or forty feet in one season, and yield flowers in clusters, of a brownish yellow colour from May to July.

I shall only add to the above, the running kinds of roses; although there are many other things which might be mentioned.

Rosa multiflora, from China, is pretty well known, producing thousands of small double red roses in bunches. It requires a sheltered situation from some of our keen north-westerns. *Rosa multiflora alba*, from the same country, is of late importation, but as it increases readily, may be obtained at about the same price as the former; the bunches of flowers are white. *Rosa Grivellis*, a running rose, also from China, the flowers of various colours. *Rosa rubifolia*, Raspberry-leaved rose, from our Northern frontiers, and extending over the Western country; although a single flowering rose, it produces large bunches of flowers, which are differently coloured on the same bunch, exactly like the former China kind, and is another instance of the similarity of plants, natives of China, and our country.

Rosa canina, *fl. pleno*. English double dog rose, is a very pretty little double rose, and will run to a great height. *Rosa Banksii*, Lady Banks' double white China running rose; it runs up and spreads much—it may be easily known from others of the running roses, by its being entirely destitute of prickles. *Rosa Noisette*, and Champney's, are said to have been raised from China seeds in Carolina—they are not strictly running roses, but as they grow up tall, are fine ornaments for the shrubbery, flowering during the whole of the Summer and Autumn, in large clusters. The Maderia rose, or double white cluster, musk, flowers throughout the Summer and Autumn months, and is therefore well adapted for the shrubbery. *Rosa Cherokensis*, called the nondescript, or Georgia rose—the flowers are very large, being white, with yellow centre. This is a running rose, growing very high around trees, &c.

Rosa rubiginosa, or Sweetbriar, is too well known to need description.

BRIEF DIRECTIONS

FOR THE

P R O P A G A T I O N

OF

F L O W E R I N G S H R U B S .

Flowering shrubs are variously propagated by slips, cuttings, layers, suckers, buds or scions; and these may be thus defined.

1. Slips are simply small branches, slipped down from the side of a large branch, or from the main stem. These should be taken from the parent plants, carefully, so as to leave an eye or heel, at the lower or but-end.

2. Cuttings should be made from shoots or stalks of a prior year's growth; and such should be selected as are well ripened, having their joints not far apart: they may be cut so as to have three or four joints in each cutting. In some species of succulent plants, the joints being near together, cuttings need not be more than from four to six inches long; but shrubby plants in general will admit of their being from ten to twelve inches.

3. Layers differ from cuttings in nothing, except that they strike root into the soil, while yet adhering to the parent plant.

4. Suckers are in reality young plants, connected to the parent at the root, which should be carefully separated in Spring or Autumn, and transplanted in the same manner as plants raised by any other method; either in a Nursery bed, Shrubbery, or Flower border.

5. Scions are of two sorts; scions properly so called, and buds. A scion is a cutting, or portion of a plant, which is caused to grow upon another plant, from which it attracts fluid for the nourishment of its leaf buds; these thus fed, gradually grow upwards into branches, and send woody matter downwards, so as to become connected with the stock grafted on.

The business of planting slips, cuttings, &c. of the tender kinds into nursery pots, and the hardy kinds into borders, is generally performed in Spring and Autumn; there are, however, some exceptions to this rule, which will be explained hereafter. See Calendar and Index.

For the purpose of raising hardy flowering shrubs by slips or cuttings, let a border be prepared in a shaded and sheltered situation, by manuring and deep digging. Provide plants about a foot long, and insert them into the ground, full one-third of their length; the rows may be about two feet apart, and the plants nine inches from each other in the rows. Press the ground around the stems, and rake it smooth. The after management of nursery beds made in Spring, is to keep them watered in dry weather, also to hoe them occasionally, and by Autumn the plants will be rooted.

In cold climates, plantations made in Autumn, should be protected by a covering of leaves, straw or litter, merely sufficient to screen the plants from wind and the sun's rays in time of freezing, the heat of the Sun being more destructive to vegetation in Winter than the cold weather.

To increase flowering shrubs, rose bushes, or any other plants by layers, dig the ground about the plants to be operated on to a good depth; then with a sharp knife cut between two joints half through the stalk or branch, and turning the edge of the knife upwards, make a slit past the first joint to the middle between it and the next above; make a hollow in the ground and insert the cut part from one to three inches deep, according to the nature of the plant operated on, keeping the branch perpendicular, and the slit open. Each layer should be pegged down with a hooked stick, made from small branches of trees, to keep it in its proper position, as well as to prevent the cut part from uniting, whence the roots form for the young plants.

Budding, grafting, and inarching, is often practised on shrubs, with a view to perpetuate improved varieties. Budding may be performed on roses of different descriptions, as the White Moss, Unique, Tuscany, and other fine varieties; upon such wild kinds as are of a strong habit. The best time for performing the operation, is towards the end of July

or early in August, as the buds are then generally matured so that the bark parts freely from the wood, which is essential to the successful accomplishment of the business.

Grafting is generally performed in the Spring. There are many methods practised on trees, as cleft grafting, whip grafting, saddle grafting, side grafting, root grafting, inarching or grafting by approach, &c. which methods are all fully explained under the head of "Budding and Grafting," in the fruit department. I shall, however, here present a short view of the mode best adapted for shrubs.

Scallop budding is performed by cutting from a small stock a thin narrow scallop of wood, about an inch in length, and taking from the chosen twig, a thin scallop of wood of the same dimensions: this is instantly applied, and fitted perfectly at top and bottom, and as nearly as possible on its sides, and firmly bound with bass matting. This may be performed in Spring, and if it fails, it may be done again in the month of July. The French practise this mode on Roses.

The most simple method of grafting is, to cut off the stock in a wedge-like manner; then prepare one of the grafts with three or four eyes; proceed to cut a slit in it upwards, and thrust it on the stock, taking care to join the bark of each together; tie them firmly together with bass, and immediately cover the grafted part with clay and horse dung mixed; which being well prepared, should be closed securely round the graft in an oval form,

Inarching, or grafting by approach may be thus performed. The shrubs to be grafted must be growing very near to those which are to furnish the grafts; a branch of each must then be prepared by making a long sloping cut nearly to its centre; the twain must be brought together, and secured by a bandage of matting, so that the bark may meet as nearly as possible. The graft may then be covered with clay composition; and when a complete union has taken place, the plants may be separated with a sharp knife, by cutting off below the junction.

As the above directions are applicable to the propagation, and management of Greenhouse tender, and half hardy

plants, as well as to hardy shrubs and vines ; it may be necessary here to remind the reader, that delicate roses and half-hardy woody plants left out during the Winter, should be protected either by bending down the branches and covering them with soil, or by tying them up to stakes, and binding straw snugly around them. At the same time throw some dung on the ground about the roots ; the longest of which may be raked off on the approach of Spring, and the shortest forked in, so as to manure the plants, and thus give vigour to their rising shoots.

Deciduous shrubs may be transplanted at any time after they lose their leaves, and before the buds begin to expand in Spring, provided the ground can be brought into good condition to receive them ; the holes should be dug capacious enough to hold the roots without cramping them, and some earth, well pulverized, must be thrown equally among the fibres of the roots, which should be well shaken, and the earth trodden down around the plants, until brought to the level required. Evergreens should be removed carefully with a ball of earth connected with their roots, and some good mould should be provided to fill in with.

The Spring pruning of shrubs and vines should be attended to before the buds begin to rise ; say March in the Northern States, and January in the South. In performing this business, use a sharp knife, in order that all amputations and wounds be cut and pared smooth, and in a slanting manner. Divest the plants of all dead wood, superfluous branches, and those which cross each other. Regulate the plantation in such manner, that the natural form and habit of each plant be retained as much as possible, and train the branches so that the Sun can have free access to every part ; bearing in mind the hints thrown out in the introduction to our Catalogue. Some shrubs and vines will need a Summer pruning, merely to thin out young shoots, superfluous wood, &c. and to train straggling branches.

BEAUTIES OF APRIL AND MAY.

THE following article is submitted, as being well calculated to afford amateurs mental recreation, while engaged in rural pursuits ; and it is presumed that the practical gardener will not view the insertion of this article as a digression, as it exhibits the beauty and order of the flowery tribe in propitious climates, or when cultivated at the proper season; in a truly appropriate and amusing light.

APRIL.

"Descend, sweet April, from yon watery bow,
And liberal strew the ground with budding flowers,
With leafless Crocus, leaf-veiled Violet,
Auricula, with powdered cup. Primrose
That loves to lurk below the Hawthorn shade."

It is generally admitted, that the month of April gives the most perfect image of Spring ; for its vicissitudes of warm gleams of sunshine and gentle showers, have the most powerful effect in hastening the universal springing of the vegetable tribes, from whence the season derives its appellation. Next comes the favourite month of the year, in poetical description,

MAY.

"For thee, sweet month, the groves green liv'ries wear;
If not the first, the fairest in the year ;
Thou dost afford us many pleasant hours,
While Nature's ready-pencil paints the flowers."

The pious Hervey, in his *Meditations on the Flower Garden*, has furnished us many sublime ideas respecting the order, variety, and beauty of the flowery tribe.* It is in

*Those who have read Hervey's *Meditations on the Flower Garden*, will discover that the pious author's phraseology, and several of his sublime ideas, are interspersed through this article, which, from being blended with other matter, could not be designated in the customary way.

vain to attempt a catalogue of those amiable gifts. There is an endless multiplicity in their characters, yet an invincible order in their approaches. Every month, almost every week, has its peculiar ornaments ; not servilely copying the works of its predecessors, but forming, still forming, and still executing, some new design ; so lavish is the fancy, yet so exact is the process of Nature. Were all the flowery tribe to exhibit themselves at one particular season, there would be at once a promiscuous throng, and at once a total privation.

We should scarcely have an opportunity of adverting to the dainty qualities of half, and must soon lose the agreeable company of them all. But now, since every species has a separate post to occupy, and a distinct interval for appearing, we can take a leisurely and minute survey of each succeeding set. We can view and review their forms, enter into a more intimate acquaintance with their charming accomplishments, and receive all those pleasing sensations which they are calculated to yield.

Before the trees have ventured to unfold their leaves, and while the icicles are pendant on our houses, the Snow-drop breaks her way through the frozen soil, fearless of danger. Next peeps out the Crocus, but cautiously and with an air of timidity. She shuns the howling blasts, and cleaves closely to her humble situation. Nor is the Violet last in the shining embassy, which, with all the embellishments that would grace a royal garden, condescends to line our borders, and bloom at the feet of briars. Freely she distributes the bounty of her emissive sweets, while herself retires from sight, seeking rather to administer pleasure than to win admiration. Emblem, expressive emblem, of those modest virtues which delight to bloom in obscurity. There are several kinds of Violets, but the fragrant, both blue and white, are the earliest. Shakspeare compares an exquisitely sweet strain of music to the delicious scent of this flower :

*"Oh ! it came o'er my ear like the sweet South,
That breathes upon a bank of Violets,
Stealing and giving odour."*

The pious Hervey, in his admonitions to those who indulge in sloth, has thrown out the following sublime ideas: What sweets are those which so agreeably salute my nostrils? They are the breath of the flowers, the incense of the gardens. How liberally does the Jasmine dispense her odoriferous riches! How deliciously has the Woodbine embalmed this morning walk! The air is all perfume. And is not this another most engaging argument to forsake the bed of sloth? Who would be involved in senseless slumbers, while so many breathing sweets invite him to a feast of fragrancy—especially considering that the advancing day will exhale the volatile dainties? A fugitive treat they are, prepared only for the wakeful and industrious. Whereas, when the sluggard lifts his heavy eyes, the flowers will droop, their fine sweets be dissipated, and instead of this refreshing humidity, the air will become a kind of liquid fire.”

With this very motive, heightened by a representation of the most charming pieces of morning scenery, the parent of mankind awakes his lovely consort. There is such a delicacy in the choice, and so much life in the description of these rural images, that I cannot excuse myself without repeating the whole passage. Whisper it, some friendly genius, in the ear of every one, who is now sunk in sleep, and lost to all these refined gratifications!

“Awake! the morning shines, and the fresh field
Calls you: ye lose the prime, to mark how spring
The tended plants, how blows the Citron grove;
What drops the Myrrh, and what the balmy Reed;
How Nature paints her colours; how the bee
Sits on the bloom, extracting liquid sweets.”

How delightful is this fragrance! It is distributed in the nicest proportion; neither so strong as to oppress the organs, nor so faint as to elude them. We are soon cloyed at a sumptuous banquet; but this pleasure never loses its poignancy, never palls the appetite. Here luxury itself is innocence; or rather in this case, indulgence is incapable of excess. This balmy entertainment not only regales the

sense, but cheers the very soul; and, instead of clogging, elates its powers.

“The soft green grass is growing
O’er meadow and o’er dale;
The silvery founts are flowing
Upon the verdant vale;
The pale Snow-drop is springing
To greet the glowing Sun;
The Primrose sweet is flinging
Perfume the fields along;
The trees are in their blossom,
The birds are in their song;
As Spring upon the bosom
Of Nature’s borne along.”

“So the dawn of human life
Doth green and verdant spring:
It doth little ween the strife—
Like the Snow-drop it is fair,
And like the Primrose sweet,
But its innocence can’t scare
The blight from its retreat.”

Our subject is so enchanting, that we had inadvertently wandered from the path we first entered. We now retrace our steps, and take a glance at surrounding objects. The fields look green with the springing grass. See the Daffodil how it spreads itself to the wind! The leaves of Honey-suckles begin to expand, and Lilacs, or Syringas, of various hues, unfold their buds. The Almond exhibits its rosy clusters, and the Corchorus its golden balls. Many of the lowlier plants exhibit their yellow and purple colours, and the buds of Lilies, and other Perennial plants, prepare to show themselves. If we turn our attention to the orchard, we behold the Apricots, Nectarines, and Peaches, lead the way in blossoming, which are followed by the Cherry and the Plum. These form a most agreeable spectacle, as well on account of their beauty as of the promise they give of future benefits. It is, however, an anxious time for the possessor, as the fairest prospect of a plentiful increase is often blighted. Shakspeare draws a pathetic comparison

from this circumstance, of the delusive nature of human expectations :

"This is the state of man ; to-day he puts forth
The tender leaves of hope ; to-morrow blossoms,
And bears his blushing honors thick upon him ;
The third day comes a frost, a killing frost,
And nips his root."

But we now return to the garden. Before we have time to explore Nature's treasures, many disappear ; among these are the humble Daisy, which shrinks from the intense heat, and the several varieties of Primulas or early spring flowers. The various grades of Polyanthus deserve a close inspection ; these, for a while, exhibit their sparkling beauties, but alas ! soon disappear. Scarcely have we sustained this loss, but in comes the Auricula, and more than retrieves it. Arrayed she comes in a splendid variety of amiable forms, with an eye of crystal, and garments of the most glossy satin. A very distinguished procession this ! The favorite care of the florist, but these also soon disappear. Who could forbear grieving at their departure, did not the various sorts of bulbous flowers burst their bands asunder, or rather expand so as to exhibit their fragrance and beauty.

"Fair-handed Spring

Throws out the Snow-drop and the Crocus first,
The Daisy, Primrose, Violet darkly blue,
And Polyanthus with unnumbered dyes.
Then comes the Auricula, enriched with shining meal,
O'er all their velvet leaves."

While we reluctantly dispense with the sweet perfumes of the Hyacinth and Narcissus, we behold the Tulips begin to raise themselves on their fine wands or stately stalks. They flush the parterre with one of the gayest dresses that blooming Nature wears. Here one may behold the innocent wantonness of beauty. Here she indulges a thousand freaks, and sports herself in the most charming diversity of colours. In a grove of Tulips, or a bed of Pinks, one perceives a difference in almost every individual. Scarcely any two

are turned and tinted exactly alike. What colours, what colours are here! these so nobly bold, and those so delicately languid!

What a glow is enkindled in some! what a gloss shines upon others! With what a masterly skill is every one of the varying tints disposed! Here they seem to be thrown on with an easy dash of security and freedom; there they are adjusted by the nicest touches of art and accuracy. Those colours which form the ground are always so judiciously chosen, as to heighten the lustre of the superadded figures; while the verdure of the impalement, or shadings of the foliage, impart new liveliness to the whole. Fine, inimitably fine, is the texture of the web on which these shining treasures are displayed. What are the labours of the Persian looms; what all the gay attire which the shuttle or the needle can furnish, compared with Nature's works? One cannot forbear reflection in this place, on the too prevailing humour of being fond and ostentatious of dress. What an abject and mistaken ambition is this! How unworthy the dignity of man, and the wisdom of rational beings! Especially since these little productions of the earth have indisputably the pre-eminence in such outward embellishments.

"Bright TULIPS, we do know,
Ye had your coming hither,
And fading time doth show,
That ye must quickly wither:

Your sisterhood may stay,
And smile here for an hour,
But ye must quickly die away,
E'en as the meanest flower.

Come virgins, then, and see
Your frailties, and bemoan ye;
For lost like these,—'twill be
As time had never known ye."

But let us not forget the fragrant, the very fragrant Wall and Gilli-flowers; some of these regale us with their per-

fumes through various vicissitudes and alternations of the season, while others make a transient visit only.

"I love thee, lone and pensive flower,
Because thou dost not flaunt thy bloom
In pleasure's gay and garnish'd bower,
Or luxury's proud banquet room ;
But on the silent mouldering wall
Thy clinging leaves a fragrance shed,
Or give to the deserted hall
A relic of its glories fled.

These wreaths, in vivid freshness bright,
Methinks the fluttering herd portray,
Who bask on fortune's golden light,
And wanton in her joyous way ;
But thou art like that gentle love,
Which blooms when friends and fame have pass'd,
Towers the dark wreck of hope above,
And smiles through ruin to the last."

In favoured climates arises the Anemone, encircled at the bottom with a spreading robe, and rounded at the top into a beautiful dome. In its loosely-flowing mantle, you may observe a noble negligence ; in its gently-bending tufts the nicest symmetry. This may be termed the fine gentleman of the garden, because it seems to possess the means of uniting simplicity and refinement, of reconciling art and ease. The same month has the merit of producing the *Ranunculus*. All bold and graceful, it expands the riches of its foliage, and acquires by degrees the loveliest enamel in the world. As persons of intrinsic worth disdain the superficial arts of recommendation practised by fops, so this lordly flower scorns to borrow any of its excellencies from powders and essences. It needs no such attractions to render it the darling of the curious, being sufficiently engaging from the elegance of its figure, the radiant variety of its tinges, and a certain superior dignity of aspect.

JUNE.

"Now have young April, and the blue-eyed May,
Vanished awhile, and lo ! the glorious June
(While Nature ripens in his burning noon,)
Comes like a young inheritor."

I had intended to confine our meditations to the beauties of April and May, but Nature seems to improve in her operations. Her latest strokes are the most masterly. To crown the collection, she introduces the Carnation, which captivates our eyes with a noble spread of graces, and charms another sense with a profusion of exquisite odours. This single flower has centered in itself the perfection of all the preceding. The moment it appears, it so commands our attention, that we scarcely regret the absence of the rest.

“Maternal Flora, with benignant hand,
Her flowers profusely scatters o’er the land :
These deck the vallies with unnumber’d hues,
And far around their pregnant sweets diffuse ;
The broad CARNATIONS, gay and spotted Pinks,
Are shower’d profuse along the rivers’ brinks.”

The field we have entered is so extensive and so enchanting, that we cannot extricate ourselves, without taking a cursory glance at the airs and habits, the attitude and lineaments, of each distinct class. See the Pæonia of China, splendid and beautifully grand ! View the charming Rose, delicate and languishingly fair ! and while you inhale its balmy sweetness, you will be constrained to admire it, notwithstanding its thorny appendages.

“Rose ! thou art the sweetest flower
That ever drank the amber shower ;
Rose ! thou art the fondest child
Of dimpled Spring ! the wood-nymph wild !
Resplendant Rose ! the flower of flowers,
Whose breath perfumes Olympus’ bowers ;
Whose virgin blush, of chasten’d dye,
Enchants so much our mental eye.”

Behold all the pomp and glory of the parterre, where Nature’s paint and perfume do wonders. Some rear their heads as with a majestic mien, and overlook, like sovereigns or nobles, the whole parterre. Others seem more modest in their aims, and advance only to the middle stations ; a genius turned for heraldry might term them the gentry of

the border ; while others, free from all aspiring airs, creep unambitiously on the ground, and look like the commonalty of the kind. Some are intersected with elegant stripes, or studded with radiant spots. Some affect to be genteelly powdered, or neatly fringed ; while others are plain in their aspect, unaffected in their dress, and content to please with a naked simplicity. Some assume the monarch's purple ; some look most becoming in the virgin's white ; but black, doleful black, has no admittance into the wardrobe of Spring. The weeds of mourning would be a manifest indecorum, when Nature holds an universal festival. She would now inspire none but delightful ideas, and therefore always makes her appearance in some amiable suit. Here stands a warrior clad with crimson ; there sits a magistrate robed in scarlet ; and yonder struts a pretty fellow, that seems to have dipped his plumes in the rainbow, and glitters in all the gay colours of that resplendent arch. Some rise into a curious cup, or fall into a set of beautiful bells. Others spread themselves in a swelling tuft, or crowd into a delicious cluster. In some the predominant stain softens by the gentlest diminutions, till it has even stolen away from itself. The eye is amused at the agreeable delusion, and we wonder to find ourselves insensibly decoyed into quite a different lustre. In others one would think the fine tinges were emulous of pre-eminence ; disdaining to mingle, they confront one another with the resolution of rivals, determined to dispute the prize of beauty ; while each is improved, by the opposition, into the highest vivacity of complexion.

"Mrs. Pæony came in quite late in a heat,
With the Ice-plant, dew-spangled from forehead to feet ;
Lobelia, attired like a queen in her pride,
And Dahlias, with trimmings new furbish'd and dyed,
And the Blue-bells, and Hare-bells in simple array,
With all their Scotch cousins from highland and brae,
Ragged Ladies and Marigolds clustered together,
And gossip'd of scandal, the news, and the weather ;
What dresses were worn at the wedding so fine
Of sharp Mrs. Thistle, and sweet Columbine."

OBSERVATIONS

ON THE

CULTIVATION OF BULBOUS AND TUBEROUS-ROOTED
PLANTS.

THESE plants exhibit a striking variety of the beauties of Nature. It would seem as if every change she was capable of forming, was included in the radiant colours of the Tulip. Never was a cup either painted or enamelled with such a profusion of tints. Its stripes are so glowing, its contrasts so strong, and the arrangement of them both so elegant and artful, that it may, with propriety, be denominated the reigning beauty of the garden in its season. The Hyacinth is also an estimable flower for its blooming complexion, as well as for its most agreeable perfume and variety.

"The Hyacinth, purple, white, and blue,
Which flung from its bells a sweet peal anew,
Of music so delicate, soft, intense,
It was felt like an odour within the sense."

The Double Dahlia, in its numerous varieties, is inconceivably splendid. It is only about forty years since the first of these, which was single, was introduced into Europe from Mexico.

Double Dahlias of three colours, were first known in the year 1802, since that time the varieties have so increased, that such as a few years ago were considered beautiful, are now thrown away to give place to the more splendid sorts. I have good authority for stating, that upwards of twenty thousand seedlings are raised yearly in England, only a few of which are introduced into the collections of amateurs, to take the place of such old sorts as may from time to time be rejected. This is done, in order that none but the very choicest be retained in such collections.

In some gardens in Holland they cultivate, by distinct names, about eleven hundred varieties of Tulips, thirteen

covered around the roots, with dung or litter ; this will enable them to ripen without being injured by frost ; and in about a week after being cut down, or on appearance of severe weather, they should be dug up and packed in dry sand, and then stowed away in a dry place out of the reach of frost. The temperature suited to keep greenhouse plants will preserve them in good order. Some people complain of the difficulty of keeping Dahlia roots through the Winter. I am of opinion that they are often killed from being taken up before they are ripe, and then put in a confined damp place ; or are by some, perhaps, subjected to the other extreme, and dried to a husk. I keep mine on shelves in the greenhouse, and seldom lose one in a hundred. If it be an object with the cultivator to have the names perpetuated from year to year, each plant should have a small label affixed to the old stalk, by means of small brass or copper wire, as twine is very apt to get rotten.

Cape Bulbs, and such tuberous roots as are cultivated in pots, on account of their tenderness, should be kept dry after the foliage is decayed, until within about a month of their period of regerminating, at which time they should, after having been deprived of their surplus offsets, be repotted in good fresh earth.

There are some descriptions of bulbous and tuberous roots that need not be taken up oftener than once in two or three years, and then only to deprive them of the young offsets, and to manure the ground. These will be described hereafter under their different heads.

In the articles which follow, I have named the preferable season for planting the various kinds of bulbous and tuberous roots ; but as some bulbs will keep in good condition several months, there can be no objection to retaining such out of the ground, to suit any particular purpose or convenience.

DIRECTIONS

FOR THE

CULTIVATION OF BULBOUS AND TUBEROUS-ROOTED

PLANTS.

AMARYLLISES.

Of this genus of flowering bulbs, there are about eighty species, and upwards of one hundred varieties; they are natives of South America, and in Europe are generally kept in the hot-house; some of the varieties are hybrids, produced by cultivation; these succeed very well in the greenhouse, and in this country we frequently have very perfect flowers in the borders. A few of the choicest varieties are as follows:

Amaryllis Aulica, or Crowned Amaryllis, is one of the most beautiful; it produces four flowers, about seven inches in diameter, on an erect stem, about two feet and a half high, with six petals of green, crimson, and fine transparent red colours.

A. Ballota, produces three or four rich scarlet flowers on the stem, each about five inches in diameter; there are two or three varieties of this species, all beautiful.

A. Johnsoniensis. The stem of this variety rises about two feet, and exhibits four beautiful scarlet flowers, with a white streak in the centre of each petal, each flower about six inches diameter. It sometimes produce two stems.

A. Longifolia, or *Crinum Capense*, is perfectly hardy; it flowers in large umbels of a pink colour, inclining to white, and is a good garden variety.

Amaryllis formosissima, or Jacobean Lily, produces a flower of great beauty; although a low-priced plant, it throws out gracefully its glittering crimson-coloured petals, which have a brilliancy almost too intense for the eye to rest upon.

The *A. Lutea*, produces its bright yellow flowers in

October, in the open air ; but the bulb requires a little protection in the Winter, or it may perish.

The most suitable soil for Amaryllises is a clean new earth, taken from under fresh grass sods, mixed with sand and leaf mould ; the latter ingredient should form about a third of the whole, and the sand about a sixth. Some of the varieties may be planted in pots during the month of April, and others will do very well in the open ground, if planted early in May, in a sunny situation. The bulb should not be set more than half its depth in the ground ; as, if planted too deep, it will not bloom ; the plant deriving its nourishment only from the fibres. When the bulbs have done flowering, such as are in pots should be watered very sparingly, so that they may be perfectly ripened, which will cause them to shoot stronger in the ensuing season, and those in the ground should be taken up, and preserved in sand or paper.

ANEMONES AND RANUNCULUSES.

These are medium, or half-hardy roots, producing beautiful little flowers of various hues, and are highly deserving of cultivation. The bulbs should be planted in a fresh, well pulverized, loamy soil, enriched with cow dung. If planted in the garden, the beds ought not to be raised above one inch higher than the alleys, and the surface should be level, as it is necessary for the prosperity of these plants, rather to retain than to throw off moisture. The plants will generally survive our Winters ; but it is always safest to plant them in such a manner that a temporary frame of boards can be placed over them when the weather sets in severe ; and if they are to be shaded while in flower, the posts intended for the awning may be fixed in the ground at the same time ; these will serve to nail the boards to, and thus answer two purposes.

Anemones and *Ranunculuses* may be planted during October or November, in drills two inches deep, and six inches apart ; the roots should be placed claws downwards,

about four inches distant from each other, and covered up, leaving the bed quite level. The awning need not be erected over the beds until they come into bud, which will be early in May ; the extreme heat of the American climate is, however, unfavourable to the perfect developement of their beautiful blossoms in ordinary seasons, even when shaded.

CROCUSES.

These are hardy little bulbs, said to be natives of Switzerland. There are in all about fifty varieties of this humble, yet beautiful plant, embracing a great variety of hues and complexions, and their hardiness, and earliness in flower, offer a strong motive for their cultivation. The bulbs may be planted in October or November, in rows about six inches from the edgings ; if in beds, they may be placed in ranks of distinct colours, about four inches apart, and from one to two deep, which will afford to their admirers considerable amusement and gratification, and that at a very early season. They are generally in full perfection early in April

CROWN IMPERIAL.

This is a species of the genus *Fritillaria*, of which there are about twenty species and varieties, chiefly natives of Persia. These squamose bulbs produce tall luxuriant stems, embellished with green glossy foliage, and flowers of various hues ; but there are only a few of the most curious cultivated, perhaps on account of their odour, which to some persons is disagreeable. They are, however, very hardy, and produce singular and showy flowers in April and May, suited to make variety in the flower borders, in which they may be planted in August and September, from three to four inches deep ; they need not be taken up every year as other bulbs, and when they are, which may be about every

third year, they ought not to be retained too long out of the ground before they are again replanted.

COLCHICUM.

This curious little bulb, being planted in the month of June, about two inches deep, produces its flowers in October, it then dies, without leaving any external appearance of seeds ; they, however, lie buried in the bulb all the Winter, and in Spring produce a stalk with seeds, which get ripe by the first of June, just in time to plant for flowering in the ensuing Autumn. How wonderful are the provisions of nature !

CYCLAMEN.

There are several species of the Persian Cyclamen which are worthy of cultivation in pots ; the varieties, Coum and Persicum, will bloom in a greenhouse, or warm room, from January to April, if planted in a good light compost early in September. The foliage of these plants is of a dark green velvet colour ; and the flowers of the variety Coum are of a dark crimson colour ; those of the variety Persicum are of a delicate French white, tipped with pink, and their fragrance is similar to that of the wild rose.

DOUBLE DAHLIA.

This may with propriety be denominated one of the most important perennial tuberous-rooted plants that can be introduced into a garden, and from the circumstance of its having become so fashionable of late years, I have felt anxious to furnish in this work, a catalogue of all the choicest varieties attainable ; I therefore applied to Mr. G. C. Thorburn, who, from a regular correspondence with connoisseurs, both in England and America, becomes acquainted

with all the most beautiful ~~and rare~~ varieties. He has kindly furnished a list and description of about one hundred; including the choicest seedlings of 1838 and 1839, which will be cultivated for the first time in America, in his garden at Astoria, 1840; plants from which will be for sale at No. 11 John street. To these I have added about two hundred and fifty varieties, most of which I have had under cultivation in my own garden, and which may be justly denominated pre-eminent.

In making this selection, several superb varieties are omitted, not because they are undervalued, but for the sake of brevity, which in a work of this kind must be consulted. Those marked thus † are native American varieties. Those marked thus * obtained the greatest number of premiums at the various Floricultural and Horticultural exhibitions in Great Britain, as well as in our own country. There are, perhaps, a hundred more in this catalogue not far beneath them, but none are marked except those which from having been tested in this climate, can with confidence be recommended as being free and perfect bloomers. The choicest seedlings of 1838 and 9, and which have been purchased in England at from fifteen shillings to five pounds sterling each, are marked thus §. It may be necessary to observe, that many of our choice old varieties, as well as several of the new ones hereinafter described, have not been offered in competition at public exhibitions; these are, therefore, not to be undervalued for want of the star or asterisk, and it is presumed that the brief description given of the different shades, will be sufficient to govern amateurs in their choice.

As much depends on the climate, soil and situation in which Dahlias are cultivated; and as the descriptions which follow have been given by various persons, in different parts of England as well as America, whose soils and situations are different, the height of these plants may vary a foot or more from our estimate, when planted in one uniform soil and situation.

CATALOGUE

OF

DOUBLE DAHLIAS.

† Denotes American Seedlings. * Free Bloomers. ‡ New Varieties. HEIGHT

IN FEET.

* Acme of Perfection, (<i>Harris's</i>) white, with crimson edge	-	4 to 5
Ada Byron, shaded rose,	-	4 to 5
* Addison, puce, beautifully shaded with crimson	-	4 to 5
Adonis, (<i>Widnall's</i>), a free-blooming fringed scarlet	-	4 to 5
* Adventure, (<i>Toward's</i>), extra fine purple	-	4 to 5
* Agamemnon, (<i>Widnall's</i>), rich ruby, crimson, a fine bloomer	-	5 to 6
§ Alba Elegans, pure white, elegant shaped flower	-	4 to 5
§ Alciope, (<i>Girling's</i>), fine rosy purple	-	4 to 5
Alpha, (<i>Simmond's</i>), fine scarlet crimson	-	6 to 8
Angelina, white, beautifully edged with lilac	-	4 to 5
§ Antiope, (<i>Case's</i>), beautiful lilac, fine shape	-	5 to 6
* Apollo, (<i>Widnall's</i>), fine dark scarlet, cupped petals	-	4 to 5
* Ariel, (<i>Inwood's</i>), white, edged with lilac	-	4 to 5
* Aurora, (<i>Maule's</i>), white, striped with crimson	-	4 to 5
Australia, (<i>Foster's</i>) superb shaded crimson	-	4 to 5
§ Banks of the Tyne, vivid scarlet	-	4 to 5
Battle Rival, bright yellow, large flower	-	5 to 6
* Beauty, (<i>Brown's</i>), exquisite lilac	-	4 to 5
Beauty of Bath, (<i>Bartlett's</i>), purple and cream striped	-	4 to 5
* ——— of Bedford, shaded purple, and crimson	-	4 to 5
——— of Camberwell, rosy lilac, a free-bloomer	-	5 to 6
——— of Cornwall, purple, tipped with white	-	6 to 8
——— of Dulwich, yellow, mottled with brown	-	5 to 6
§ ——— of Hyde Vale, maroon, striped with lilac	-	4 to 5
* ——— of Kingscote, white, tipped with crimson	-	3 to 4
——— of Lullingstone, dark puce, large flower	-	4 to 5
* ——— of the North, (<i>Hedley's</i>), superb purple	-	4 to 5
* ——— of Perry Hill, mottled rose and blush	-	5 to 6
† ——— of Salem, white, tinted with rosy pink	-	4 to 5
* ——— of Waterford, carnation striped	-	4 to 5
§ ——— of the WestRiding, (<i>Evans's</i>), carmine, orange mottled	-	4 to 5
* Berkshire Champion, crimson maroon, globular shape	-	4 to 5
* Bianca, (<i>Lownds's</i>), white, good form	-	4 to 5
Birmingham Victor, (<i>Hodge's</i>), fine crimson, cupped petals	-	4 to 5
† Blandina, good white	-	3 to 4
* Bontishall, dark maroon	-	5 to 6
* Bowling Green Rival, dark ruby, cupped petals	-	5 to 6
* Bride of Abydos, white, sometimes tinted with purple	-	5 to 6

† Denotes American Seedlings. * Free Bloomers. § New Varieties. HEIGHT
IN FEET.

Bride , (<i>Harding's</i>), white, with purple spots - - -	5 to 6
§ British Queen , (<i>King's</i>), light blush, mottled with blood red	4 to 5
Burgundy , dark velvet maroon, finely cupped - - -	5 to 6
* Calliope , extra fine ruby scarlet - - -	5 to 6
Cambridge Hero , (<i>Widnall's</i>), fine dark maroon - - -	6 to 7
Camarine , yellow, tipped with red - - -	4 to 5
§ Candidate , (<i>Smith's</i>), rich claret, striped with purple	4 to 5
Cedo Nulli , (<i>Pothecary's</i>), yellow, striped with red - -	3 to 4
* Champion of England , rich maroon - - -	5 to 6
* Champion , (<i>Wells's</i>), white, tipped with lilac - - -	5 to 6
Cheltenham Rival , dark shaded crimson - - -	5 to 6
Clara , (<i>Seaman's</i>), superb white - - -	4 to 5
* Cleopatra , extra fine blush white - - -	4 to 5
§ Climax , (<i>Jeffrie's</i>), dark crimson, finely formed - -	4 to 5
* Clio , (<i>Widnall's</i>), rich purple, always perfect - - -	4 to 5
Clio Perfecta , buff, tipped with purple - - -	5 to 6
* Colossus , (<i>Brown's</i>), beautiful crimson, extra large flower	5 to 6
† Competitor , (<i>Smith's</i>), blueish purple, beautiful - -	4 to 5
† Comte de Paris , fine canary yellow, superb flower - -	4 to 5
Conductor , (<i>Widnall's</i>), splendid purple - - -	3 to 4
* Conqueror of Europe , (<i>Elphinstone's</i>), blush, shaded with pink	4 to 5
Conqueror , (<i>Garnier's</i>), rich velvet crimson - - -	4 to 5
Conqueror , (<i>Chandler's</i>), fine, shaded purple - - -	5 to 6
* Conservative , (<i>Seaman's</i>), bright ruby scarlet - - -	5 to 6
† Constantine the Great , light, chastely variegated - -	4 to 5
† Contender , (<i>Girtings</i>), fine shaded purple, cupped - -	4 to 5
Contender , (<i>Stanford's</i>), rich maroon, crimson margin - -	5 to 6
Coronation , (<i>Elliot's</i>), white, laced with purple - - -	5 to 6
* Coronation , (<i>Elphinstone's</i>), beautiful rosy pink - -	4 to 5
* Corinne , (<i>Brown's</i>), white, curiously veined with crimson	3 to 4
* Coronet , superb dark puce, large flower - - -	4 to 5
Coriolanus , (<i>Dray's</i>), extra dark crimson - - -	6 to 7
Countess of Burlington , (<i>Skirving's</i>), superb white - -	3 to 4
— of Dunmore , white, with purple tips - - -	4 to 5
— of Liverpool , beautiful shaped scarlet - - -	6 to 8
* — of Mansfield , (<i>Hudson's</i>), extra fine white - - -	4 to 5
* — of Radnor , mottled lilac, and carmine - - -	4 to 5
— of Sheffield , fine rosy purple - - -	6 to 7
— of Torrington , blush, edged with lilac - - -	4 to 5
— of Wemyss , peach blossom, edged with purple - -	5 to 6
Criterion , (<i>Douglas's</i>), white, laced with bright lilac - -	5 to 6
Crocus , yellow, tipped with purple, beautiful when at perfection	4 to 5
* Daphne , (<i>Widnall's</i>), delicate blush - - -	4 to 5
Defiance , (<i>Harwood's</i>), fine purple, round cupped petals -	5 to 6
Dennissii , fine ruby purple - - -	5 to 6

† Denotes American Seedlings. * Free Bloomers. § New Varieties. HEIGHT

IN FEET.

* Desdemona, (<i>Brown's</i>), white, laced with rose, showy flower	4 to 5
† Diadem, (<i>Dunlap's</i>), fine bright scarlet	4 to 5
* Diadem of Flora, (<i>Girling's</i>), extra fine ruby scarlet	5 to 6
Diadem of Perfection, (<i>Taylor's</i>), rosy crimson, cupped petals	4 to 5
Diana, (<i>Elphinstone's</i>), beautiful crimson and yellow	4 to 5
Dictator, (<i>Wells's</i>), extra large scarlet	5 to 6
* Dido, (<i>Young's</i>), fine rosy lilac	4 to 5
† Diomedes, rich maroon and purple, shaded	4 to 5
† Donna Anna, (<i>Cook's</i>), splendid dark rose	4 to 5
* Don Carlos, beautiful crimson, fine shaped flower	4 to 5
Duchess of Bedford, (<i>Widnall's</i>), bright scarlet	4 to 5
— of Buccleugh, (<i>Cormack's</i>), sulphur, pink margin	4 to 5
— of Kent, (<i>Mitchell's</i>), white, edged with lake	4 to 5
— of Montrose, (<i>Dray's</i>), mottled rose, yellow, crimson	4 to 5
* — of Portland, (<i>Tillary's</i>), blush, purple edge	3 to 4
* — of Richmond, (<i>Elphinstone's</i>), orange and pink	4 to 5
* — of Sutherland, (<i>Shirving's</i>), blush, tipped with pink	6 to 7
* Duke of Bedford, (<i>Dennis's</i>), large crimson maroon	5 to 6
— of Bedford, (<i>Newby's</i>), dark purple	6 to 7
† — of Richmond, carmine shaded with lilac, (splendid)	4 to 5
† Dwarf Scarlet, (<i>Neale's</i>), a prolific and free bloomer	3 to 4
Earl of Tankerville, extra fine scarlet	4 to 5
§ Egyptian King, rose, delicately tipped with bronze	4 to 5
* Egyptian Prince, fine glossy plum colour	4 to 5
† Eliza, (<i>Stanford's</i>), fine yellow, with red centre	3 to 4
† Elizabeth, (<i>Trentfield's</i>), blush, mottled, edged with crimson	4 to 5
Empress, (<i>Dennis's</i>), yellow, edged with purple	5 to 6
England's Defiance, (<i>Miller's</i>), red and white, striped	3 to 4
* Essex Rival, (<i>Sorrel's</i>), fine dark purple	4 to 5
* Etonia, (<i>Keeler's</i>), extra fine salmon colour, cupped petals	4 to 5
Eupherna, (<i>Mollineux's</i>), extra fine purple	5 to 6
* Eva, (<i>Foster's</i>), fine blush white, cupped petals	3 to 4
* Exemplar, (<i>Widnall's</i>), extra large white, always perfect	5 to 6
* Exquisite, (<i>Girling's</i>), superb salmon colour, cupped petals	5 to 6
§ Fire Ball (<i>Squibb's</i>) vivid scarlet.	4 to 5
* Fisherton Champion (<i>Squibb's</i>) dark crimson	4 to 5
* Formosa (<i>Girling's</i>) fine buff, tipped with rose	5 to 6
§ Gazelle, white, edged similar to Peach blossom.	4 to 5
† General Harrison (<i>Buel and Wilson's</i>) fine scarlet.	4 to 5
* Glory, (<i>Douglas's</i>) extra large bright scarlet.	5 to 6
§ Glory of Chieveley, superb scarlet.	4 to 5
Gloria Mundi, light sulphur yellow.	4 to 5
* Glory of Plymouth, (<i>Rendle's</i>) white, tipped with purple.	4 to 5
* Glory of the West, (<i>Dray's</i>) scarlet ball-flower richly cupped.	6 to 7
* Gold Finder, (<i>Dray's</i>) bright primrose yellow, cupped.	4 to 5

† Denotes American Seedlings. * Free Bloomers. § New Varieties. HEIGHT

IN FEET.

* Golden Sovereign, (<i>Hedley's</i>) superb golden yellow	-	5 to 6
§ Grace Darling, or Heroine of the North, light, lavender margin	-	4 to 5
Grand Falconer, beautiful light crimson.	-	5 to 6
* Grandis, extra large, ruby purple	-	5 to 6
* Heathergreen Rival, sulphur yellow	-	3 to 4
Helena, (<i>Meckett's</i>) fine blush white	-	4 to 5
* Helen of Troy, beautiful light rosy blush, perfect form	-	4 to 5
† Henry Clay, superb scarlet	-	4 to 5
Hermione, (<i>Wells's</i>) white, tipped with purple	-	6 to 7
Hero, (<i>Foster's</i>) dark red, cupped petals	-	4 to 5
§ Hero of Nottingham, maroon, edged with rose	-	4 to 5
— of Seven Oaks, beautiful rosy crimson	-	4 to 5
† — of Tippecanoe, (<i>Hancock's</i>) ruby purple	-	4 to 5
* — of Wakefield, superb rosy crimson	-	5 to 6
— of Wymbourn, plum colour, fine show flower	-	4 to 5
Honourable Mrs. Ashley, (<i>Brown's</i>) white with blood tip	-	3 to 4
— Stewart Wortley, fine rosy purple	-	3 to 4
* Hope, (<i>Nevill's</i>) noval rose colour, splendid form	-	4 to 5
Horatio, (<i>Smith's</i>) yellow, margined with rosy crimson	-	3 to 4
* Horatio, (<i>Widnall's</i>) bright purple, cupped	-	5 to 6
* Horticulturist, (<i>Elphinstone's</i>) superb rosy lilac	-	4 to 5
Incomparable White, (<i>Wheeler's</i>) pure white	-	5 to 6
Independent, (<i>Girling's</i>) superb yellow	-	5 to 6
§ Ingestric Rival, fine lilac, exquisite form	-	4 to 5
Innovator, (<i>Wells's</i>) yellow edged with red, beautiful when perfect	-	4 to 5
Jealous Wife, yellow, with cupped petals.	-	4 to 5
† Jessie Thorburn, (<i>Thorburn's</i>) white, edged with pink	-	5 to 6
Joan of Arc, (<i>Catleugh's</i>) beautiful pink	-	4 to 5
Julia, (<i>Brown's</i>) nankeen colour	-	4 to 5
* Julia, (<i>Clarke's</i>) sulphur tipped with crimson	-	4 to 5
Juliet, (<i>Widnall's</i>) fine cupped rose	-	4 to 5
Juno, (<i>Girling's</i>) rich rosy purple	-	4 to 5
* Kingscote Rival, beautiful light rose	-	5 to 6
King of Beauties, (<i>Elphinstone's</i>) light with crimson edge	-	4 to 5
King Otho, ruby rose or lake colour, large flower	-	5 to 6
— of the Whites, pure white, flowers generally perfect	-	4 to 5
— of the Yellows, (<i>Elphinstone's</i>) fine cupped petals	-	4 to 5
La Carnation, (<i>Paul's</i>) white flaked with rosy crimson	-	3 to 4
* Lady Anne, (<i>Hopwood's</i>) white, laced with lilac	-	3 to 4
— Dartmouth, (<i>Widnall's</i>) white, edged with lilac	-	5 to 6
§ — Deacon, clear creamy lemon, veined with rose	-	4 to 5
— Fordwich, lilac, mottled and striped with blush	-	5 to 6
— King, fine delicate rose	-	3 to 4
— Kinnaird, (<i>Kidd's</i>) rosy lilac	-	4 to 5
§ — Maclean, light ground, crimson margin, superb flower	-	4 to 5

† Denotes American Seedlings. * Free Bloomers. § New Varieties.

HEIGHT
IN FEET.

Lady Mallet, (<i>Fawcett's</i>) white, laced with rose	-	-	3 to 4
— Molyneux, red, sometimes striped and tipped with white	-	-	4 to 5
— Northampton, white, tinted with purple	-	-	4 to 5
* — Powlet, bright lilac, perfect formed flower	-	-	4 to 5
* — Sonde s (<i>Cox's</i>) pale yellow edged with rose	-	-	4 to 5
— Webster, extra fine crimson	-	-	4 to 5
§ — Wenman, light claret, finely cupped	-	-	4 to 5
Lady of the Lake, (<i>Wells's</i>) white, tinted with rosy purple	-	-	4 to 5
§ Lancashire Witch, white, edged with purple	-	-	4 to 5
* Lavinia, pure white, edged with lilac	-	-	5 to 6
* Letitia, (<i>Wells's</i>) yellow and brown, fine shape	-	-	3 to 4
§ Lewisham Rival, white, elegantly cupped	-	-	4 to 5
Liberty, purple plum colour, a free bloomer	-	-	4 to 5
Lilac Perfection, (<i>Harding's</i>) beautiful when at maturity	-	-	5 to 6
§ Lilac Perfection, (<i>Ingram's</i>) extra fine form and colour	-	-	4 to 5
§ Lilac Unique, a fine flower and perfect bloomer	-	-	4 to 5
Lord Bath, (<i>Wheeler's</i>) large crimson purple	-	-	4 to 5
— Byron, (<i>Smith's</i>) fine bright crimson	-	-	5 to 6
— Morpeth (<i>Evans's</i>) dark puce, finely cupped	-	-	4 to 5
— Russell, bright scarlet ball, a free bloomer	-	-	4 to 5
* Lovely Ann, (<i>Dickerson's</i>) blush white, tinted with lilac	-	-	4 to 5
§ Lucina, (<i>Spencer's</i>) fine lilac, edged with crimson	-	-	4 to 5
* Madonna, (<i>Stanford's</i>) fine rosy lilac	-	-	4 to 5
Man of Honour, (<i>Harding's</i>) brilliant rose	-	-	5 to 6
* Marchioness of Lansdowne, blush, with purple edge	-	-	4 to 5
Maria Edgeworth, primrose, tipped with rose	-	-	4 to 5
* Marquis of Lothian, (<i>Goodall's</i>) superb rosy crimson	-	-	3 to 4
* — of Northampton, (<i>Elphinstone's</i>) mottled ruby	-	-	5 to 6
* Marshal Soult, (<i>Elphinstone's</i>) lilac and red	-	-	3 to 4
§ Marshal Soult, (<i>Stewart's</i>) mottled rose, extra fine	-	-	4 to 5
Mary, (<i>Dodd's</i>) white, laced with rosy lilac, beautiful at maturity	-	-	5 to 6
Mary (<i>Weller's</i>) light purple, cupped	-	-	4 to 5
Mary of Burgundy, (<i>Catleugh's</i>) carmine and white	-	-	4 to 5
* Mary Queen of Scots, white margined with purple	-	-	5 to 6
§ Masterpiece, (<i>Wilmer's</i>) white, tipped with lilac	-	-	3 to 4
§ Matchless, (<i>Weller's</i>) superb carmine, well-formed flower	-	-	4 to 5
* Mazeppa, (<i>Widnall's</i>) rich ruby purple	-	-	4 to 5
Medusa, (<i>Wells's</i>) white and pink, beautifully mottled	-	-	4 to 5
Metropolitan Calypso, splendid rosy blush	-	-	5 to 6
Metropolitan Perfection, dark velvet, crimson ball-flower	-	-	6 to 7
* Metropolitan Yellow, extra fine	-	-	4 to 5
* Middlesex Rival, extra fine, dark purple	-	-	5 to 6
Miss Broadwood, delicate white	-	-	4 to 5
§ Miss Johnston, fine rose, beautiful shape	-	-	4 to 5
* Miss Scroope, (<i>Hedley's</i>) fine rose, cupped	-	-	5 to 6

† Denotes American Seedlings. * Free Bloomers. § New Varieties. HEIGHT

	IN FEET.
* Miss Wilson, white, tipped with scarlet - - -	5 to 6
Miss Wortley, lilac and buff - - -	4 to 5
§ Model of Perfection, (<i>Neville's</i>) extra dark maroon - -	3 to 4
† Mrs. Bucknall, white, delicately edged with lilac - -	4 to 5
Mrs. Cullis, (<i>Hodge's</i>) fine rosy crimson - - -	4 to 5
Mrs. Davies, (<i>Norman's</i>) white, edged with purple - -	4 to 5
†* Mrs. Rushton, (<i>Buist's</i>) blush white, finely cupped -	4 to 5
* Mrs. Wilkinson, extra fine blush white - - -	5 to 6
Mungo Park, (<i>Young's</i>) light crimson - - -	4 to 5
* Napoleon (<i>Smith's</i>) dark crimson, excellent formed flower	5 to 6
†* Neale's Golden Fleece, splendid yellow - - -	4 to 5
Neil, Dr. (<i>Smith's</i>) dark maroon, free bloomer - - -	4 to 5
* Ne Plus Ultra, (<i>Widnall's</i>), fine shaped, purple and crimson	3 to 4
Newick Park Rival, (<i>Slater's</i> .) glossy purple - - -	4 to 5
* Newick Rival, (<i>Mantell's</i> .) beautiful ruby rose - - -	5 to 6
* Nimrod, (<i>Widnall's</i> .) fine dark crimson - - -	5 to 6
North Star, bright purple, a superb flower - - -	5 to 6
* Oliva, (<i>Wells's</i> .) fine yellow, tipped with red - - -	4 to 5
Osceolus, crimson tipped with white - - -	4 to 5
Ovid, (<i>Keyne's</i>) bluish purple, beautifully cupped - -	4 to 5
* Paragon. (<i>Wells's</i>) yellow, edged with white - - -	4 to 5
Peerless White, purest of whites - - -	5 to 6
Perfection, (<i>Hedley's</i>) first rate dark maroon - - -	3 to 4
Perfection, (<i>Holman's</i>) white, tipped and striped with lilac	5 to 6
Perfection, (<i>Widnall's</i>) cupped rosy crimson - - -	4 to 5
Picta, orange and red, mottled and striped - - -	4 to 5
* Picta Magniflora, (<i>Wells's</i>) yellow, edged with red - -	3 to 4
* Picta Perfecta, (<i>Harris's</i>) crimson, shaded with black -	5 to 6
Pink Perfection, compact flower, cupped petals - - -	4 to 5
Pindarus, (<i>Wells's</i>) yellow, tipped with red - - -	4 to 5
Pre-eminent, (<i>Bark's</i>) rich rosy crimson - - -	4 to 5
* Premier, (<i>Bowman's</i>) beautiful cupped yellow - - -	3 to 4
† President Van Buren, (<i>Makenzie's</i>) bronzy rose - -	4 to 5
* President, (<i>Wilmer's</i>) dark purple, well formed - - -	5 to 6
* Prima Donna, (<i>Squibb's</i>) blush, tinted with rosy lilac -	5 to 6
§ Princess of Beauties, white, shaded with rose - - -	4 to 5
* Princess Victoria, (<i>Widnall's</i>) white, edged with purple,	3 to 4
Purple Perfection, (<i>Elphinstone's</i>) fine cupped flower -	6 to 7
§ Purple Unique (<i>Allman's</i>) fine glossy purple - - -	3 to 4
* Queen of Beauties, (<i>Wells's</i> .) white, tipped with blood red	5 to 6
* Queen Elizabeth, (<i>Brown's</i> .) mottled purple and white -	6 to 7
§ Queen of Ieamond, white, with purple stripes - - -	4 to 5
—— of Spain, (<i>Downing's</i> .) white, laced with purple -	4 to 5
—— of Trumps, (<i>Elphinstone's</i> .) extra fine shaded rose -	4 to 5

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IN FEET.

Queen Victoria, (<i>Fowler's</i>), white, laced with purple	-	4 to 5
* ——— Victoria, (<i>Gaines's</i>), pure white, cupped petals	-	4 to 5
——— Victoria, (<i>Hodge's</i>), bluish, laced with carmine	-	4 to 5
* Quilled Perfection, (<i>Brown's</i>), beautiful shaded crimson	-	4 to 5
* Rainbow, (<i>Widnall's</i>), purple and crimson shaded	-	5 to 6
Red Rover, (<i>Girling's</i>), dark red, showy flower	-	5 to 6
* Reliance, (<i>Widnall's</i>), orange, margined with buff	-	5 to 6
* Rienzi, (<i>Widnall's</i>), crimson and puce, mottled	-	4 to 5
Ringleader, (<i>Wilmer's</i>), beautiful mottled rose	-	5 to 6
Rising Sun, (<i>Widnall's</i>), large bright scarlet	-	6 to 7
§ Rival President, (<i>Elliot's</i>), dark puce, splendidly formed	-	5 to 6
* Rival Purple, (<i>Taylor's</i>), extra large flower	-	5 to 6
Rival Queen, white, margined with pink	-	4 to 5
* Rival Rose, (<i>Goodwin's</i>), superb ruby rose, cupped	-	3 to 4
Rival Sussex, (<i>Holman's</i>), beautiful maroon	-	4 to 5
Rival Sussex, (<i>Stanford's</i>), fine dark puce	-	4 to 5
Rival Yellow, (<i>Jackson's</i>), brilliant yellow	-	6 to 7
* Robert Buist, (<i>Young's</i>), white, laced with purple	-	4 to 5
Robert Burt, (<i>Jackson's</i>), rich dark red	-	4 to 5
Robert L' Diable, (<i>Cormack's</i>), very dark puce	-	5 to 6
Rose de Amour, (<i>Brewer's</i>), rosy pink, tipped with white	-	5 to 6
* Rosa Superba, (<i>Elphinstone's</i>), extra fine ruby rose	-	5 to 6
Rose of Shannon, (<i>Cattleugh's</i>), splendid rose	-	4 to 5
§ Rose Superior, (<i>Girling's</i>), very splendid perfect flower	-	5 to 6
* Rosetta, (<i>Mayhew's</i>), fine ruby rose	-	4 to 5
* Royal Adelaide, or Gem, (<i>Brown's</i>), white, edged with rose	-	4 to 5
* Royal Standard, (<i>Whale's</i>), rich rosy purple	-	6 to 7
Ruby, (<i>Girling's</i>), ruby rose	-	5 to 6
Salamander, (<i>Widnall's</i>), extra large scarlet	-	4 to 5
* Scarlet Perfection, (<i>Elphinstone's</i>), unrivalled cupped flower	-	5 to 6
Scarlet Perfection, (<i>Knight's</i>), extra rich flower	-	4 to 5
* Sir Henry Fletcher, fine rosy crimson	-	4 to 5
* Sir John Seabright, (<i>Saller's</i>), superb rich crimson	-	5 to 6
Splendissima, (<i>Allman's</i>), splendid purple	-	5 to 6
§ Springall Conqueror, darkest flower known	-	4 to 5
Springfield Rival, (<i>Inwood's</i>), fine rosy cupped, crimson	-	6 to 7
Springfield Major, (<i>Gaine's</i>), large dark crimson purple	-	6 to 8
Star of Buckland crimson, tipped with white	-	4 to 5
Star, (<i>Brown's</i>), extra fine scarlet	-	5 to 6
* St. Leonard's Rival, bright rosy lilac	-	5 to 6
* Striatta Formosissima, (<i>Bates's</i>), Carnation striped, beautiful	-	3 to 4
§ Striped Perfection, (<i>Case's</i>), maroon, striped with purple	-	4 to 5
Striped Unique, (<i>Girling's</i>), orange, striped with scarlet	-	5 to 6
* Suffolk Hero, (<i>Girling's</i>), splendid crimson maroon	-	4 to 5

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HEIGHT
IN FEET.

* Sulphurea Elegans, (<i>Jones's</i>), sulphur, often tinged with red	5 to 6
Summum Bonum, (<i>Girling's</i>), purple bronze	5 to 6
* Sunbury Hero, (<i>Wilmer's</i>), yellow, tipped with red	5 to 6
* Surpasse Triumph Royal, durably fine, scarlet ruby	4 to 5
Sussex Defiance, (<i>Elphinstone's</i>), chocolate, very rare	5 to 6
* Sylph, (<i>Widnall's</i>), white, deeply edged with rose	4 to 5
Sylvesta, white, sometimes tinted with lilac	5 to 6
* Sylvia, (<i>Widnall's</i>), pale rose, finely cupped	4 to 5
Symmetry, (<i>Douglas's</i>), handsome dark crimson	4 to 5
* Topaz, (<i>Girling's</i>), fine golden yellow	3 to 4
* Tower of Sarum, (<i>Wilmer's</i>), rich rosy crimson	4 to 5
Triumphant, (<i>Jeffrie's</i>), purple, finely cupped	4 to 5
* Unique, (<i>Ansell's</i>), light yellow, tipped with red	4 to 5
Venosa, (<i>Wheeler's</i>), blush, margined with rosy crimson	5 to 6
* Victoria Regina, (<i>Harris's</i>) beautiful blush	4 to 5
* Victory, (<i>Knight's</i>), rich dark crimson	5 to 6
Village Maid, white, edged with lilac	4 to 5
§ Virgin Queen, pure white, finely formed flower	5 to 6
Viscountess of Beresford, dark crimson, tipped with white	4 to 5
Warminster Rival, extra bright purple	6 to 7
† Washington, white, inclining to blush	4 to 5
Waterloo Scarlet, (<i>Catleugh's</i>), orange scarlet, cupped	4 to 5
* Wonder, (<i>Green's</i>), white, laced with rosy lilac, splendid	4 to 5
* Wormley Star, (<i>Spier's</i>), vivid scarlet	6 to 7
§ Yellow Defiance, (<i>Cox's</i>), splendid flower, the roots of which were selling in London, Nov. 1839, at £15 sterling, equal to <i>Sixty-six dollars</i>	4 to 5
* Yellow Perfection, (<i>Stone's</i>), extra fine dark yellow	4 to 5
† Yemassee, (<i>Arnold's</i>), crimson maroon, always perfect	4 to 5
§ Yorkshire Hero, splendid ruby rose	4 to 5
* Zeno, (<i>Elphinstone's</i>), beautiful purple, blended with white	4 to 5
Zitella, fine rosy pink	3 to 4
* Zolermio, (<i>Priestley's</i>), clear deep yellow	5 to 6

As some amateurs are apt to fancy, that the most economical method of obtaining a supply of Dahlias in their gardens, is to raise them from seed, it may be necessary to remind such, that the trouble and expense of raising any quantity of seedlings, is equal to that attending the cultivation of the same number of the choicest varieties; and when it is considered that the greatest proportion of a plan-

tation may be single, and semi-double, and that but few double-flowering plants can be expected, equal to those above described, it must appear evident that it is the interest of such persons as desire to have their gardens unincumbered with plants that are not calculated to ornament the same, to procure plants or roots of such varieties as have been tested, and highly recommended, as is the case with all those described in the preceding catalogue, and also those which are generally sold by the regular florists. But as I am writing for young gardeners, it may be necessary to state, that although new varieties are usually raised from seed of the finest double flowers, some successful propagators prefer that procured from semi-double varieties. Sow seed towards the end of February, or early in March, in pots, and plunge them in a moderate hot-bed, or seed may be deposited in the earth of the beds in shallow drills, and the beds attended to as directed in the calendar for February and March.

Nothing is more simple than the cultivation of Dahlia roots. In March or April, they will, if properly kept through the Winter, begin to sprout around the old stems and tubers. To forward these sprouts in growth, the roots should be either buried in light earth, on the top of a moderate hot-bed, or else potted, and then set in a warm room, or greenhouse, and watered. As soon as the shoots have grown to the length of two or three inches, the roots may be divided in such a manner as to have a good strong shoot attached to a piece of the tuber, or old stem; each of these will, if properly managed, make a plant.* Those who may commence cultivating at an early season, should put the plants thus separated into small pots, and keep them in a growing state until about the middle of May, at which time they may be turned out of the pots with the balls of earth entire, and

* In order to obtain an extra number of plants from any choice varieties, cuttings are frequently taken from the shoots; when about three inches in length, which are planted in nursery pots, and cultivated in hot-beds; these require to be shaded from the sun, by mats, for the first fortnight, after which they may be gradually inured to the air, and treated as plants raised in the ordinary way.

planted in the open borders, from three to four feet from each other. Let the ground be well pulverized, and enriched with good old manure, before the plants are set out. If the top soil be shallow, and the subsoil inferior, it would be beneficial to the plants, if holes be dug to the depth of from a foot to eighteen inches, and then replenished with good rich compost, consisting of two-thirds fresh loam, and one third of well rotted manure.

Many cultivators have found late planting to suit better than early, and I myself have had more perfect flowers, from plants set out about the middle of June, than from those planted in May : this is easily accounted for. In July and August the weather is generally hot, which brings the forwardest plants into bud at an early season, and in the event of a continuation of hot dry weather, such buds fail to produce perfect flowers ; whereas those plants which are set out late, keep growing through the hot weather, and produce their buds just in time to receive all the benefit of the Autumnal rains. From a consideration of these circumstances, I think early in June the safest time to set out Dahlia plants ; and if those persons who have no convenience of forcing their roots, set them out in May, in ground prepared as before directed, they will generally succeed very well, provided they take care to cover them in case of a cold change of weather. The roots may be thus cultivated entire, as is frequently done ; but if it be desired to have them parted, this business can be easily accomplished without disturbing the roots, and the offsets may be planted in the ground separately or potted.

Previous to setting out the plants, it will be necessary to provide for their preservation through the varied changes of the season, or a sudden gust of wind may destroy the expectations of a year. The branches of the Dahlia are extremely brittle, and, therefore, a good stout pole, or neat stake, should be driven down near each root, of a suitable height, so that the branches as they progress in growth, may be tied thereto at every joint, which may be done with shreds of matting or twine. If the poles be in readiness, they are much more easily fixed at the time of planting the Dahlias than afterwards ; but

it may be done at any time after the ground has been softened by rain, provided it be not delayed too long, so as to subject the plants to risk. Sometimes a few forward buds of the Dahlias will exhibit their premature beauties to the beams of a July and August sun; but their lustre is quickly dimmed. The latter end of September, sometimes all October, and part of November, witness the Dahlia in all its glory; and dwarf plants, cultivated in pots, will sometimes blossom at Christmas; but they require more than ordinary care, at a late period of their growth.

GLADIOLUS, CORN-FLAG, OR SWORD LILY.

Of this genus of bulbs there are about fifty species, natives of the Cape of Good Hope. They produce flowers of various colours, in August and September, and are well worthy the attention of those who cultivate tender exotic plants. They may be planted in September or October, about an inch deep in pots, which must be kept in a greenhouse or light room, and watered sparingly until they begin to grow. The following are known to be superb species and varieties:

G. alatus, or Wing-Flowered, producing bright orange coloured flowers.

G. blandus produces flowers of a beautiful blush rose colour.

G. Byzantinus, or Turkish Flag, has large delicate purple flowers.

G. cardinalis. This variety produces very large flowers of superb scarlet, spotted with white.

G. floribundus, or cluster flower, produces large flowers, of white and pink colour.

The *Gladiolus Natalensis*, or *Psitacinna*, is perhaps the most desirable to cultivate of all others. It blossoms freely, and the colours are exquisitely beautiful. In its progress of blooming, it exhibits variable colours, as vermilion, red, yellow, green, white, crimson, &c., which brighten, as

the flower arrives at perfection, to the brilliancy of a rainbow. Another good quality displays itself in the bulb, which, if properly managed, will yield an abundance of offsets; these being cultivated, will flower the third year in perfection, and thus continue to multiply perpetually.

I have named September and October as the season for planting, because it is considered the preferable season for most bulbs; but if these be preserved in good condition through the Winter until early in April, and then planted in a soil consisting of about one half fresh loam, equal parts of leaf mould, and sand well mixed, they may be forwarded in a warm room, green-house, or moderate hot-bed, until settled warm weather, and then turned out of the pots into a border, where they can be shaded from the sun at noonday; this will induce each of them to throw up three or four stems from three to four feet high, each stem producing five or six gorgeous blossoms, in great perfection. Those planted in the Autumn or Winter, may also be turned out of the pots in June; and, from the fibres having taken substantial root in the soil before transplanting, such plants may be taken up again in August, or early in September; and on being planted in large pots, they may be removed, so as to perfect their bloom, within view of the parlour or sitting-room, which will afford considerable amusement and gratification.

HYACINTH.

"Hail to thee! hail, thou lovely flower!
Still shed around thy sweet perfume,
Still smile amid the Wintry hour,
And boast e'en then a Spring-tide bloom.
Thus hope, 'mid life's severest days,
Still smiles, still triumphs o'er despair;
Alike she lives in pleasure's rays,
And cold affliction's Winter air."

There are, as has been already stated, about thirteen hundred varieties of this family of plants, comprising all the various hues, as- white, pink, red, yellow, blue, purple,

crimson, &c. and some of those with various coloured eyes. They begin to produce their flowers in the open borders early in April, on short erect stems covered with florets or small bells; each floret is well filled with petals rising towards the centre, and is suspended from the stem by short strong footstalks, the longest at the bottom, and the uppermost florets stand so erect as to form a pyramid. A plantation, or a bed of these, have a very beautiful appearance, provided they are well attended to. In planting them, which should be in the months of October or November, care should be taken to have the colours so diversified as to suit the fancy; they may be placed in short rows across the bed, about eight inches apart, and from three to four inches deep, measuring from the top of the bulb, and covered up at the setting in of Winter, as before recommended for bulbs in general.

Those who may have a fine collection, should have an awning erected in the Spring, to screen them from the chilling blast, and also from drenching rains and the noon-day sun; and they should be looked over as soon as they make their appearance above ground, to see if they are all perfect and regular; if faulty or inferior bulbs should appear to have been planted in a conspicuous part of the bed, by accident or mistake, they can be taken out, and by shortening the rows, others may be substituted with a trowel. When all are regulated, look over them frequently, and as the stems shoot up, tie them to wires, or small rods, with shreds of bass matting or thread, being careful not to injure the florets. In about six weeks after they have done flowering, the bulbs may be taken up, and managed as recommended for bulbs in general, in a former page.

IRIS, OR FLOWER DE LUCE.

There are two distinct species of plants cultivated under the name of *Flower de Luce*, each consisting of several varieties. The bulbous species and varieties are designated as English, Spanish, Chalcedonian, and American. These,

if introduced into the flower borders, and intermixed with perennial plants of variable colours, have a very pretty appearance when planted in clumps or patches. This may be done in the month of October, by taking out a spadeful of earth from each place allotted for a plant, and then inserting three or four bulbs, about two inches deep. If the ground be poor, some rich compost may be dug in around the spot before the bulbs are planted, and if several sorts be planted in the same border, let them be of various colours.

The tuberous-rooted are of various colours, as blue, yellow, brown, and spotted; they are easily cultivated, and flower freely in a loose soil inclining to moisture, if planted in March or April.

IXIAS.

These are tender, but very free-flowering bulbs, producing on their stems, which vary in height from six inches to two feet, very delicate flowers of various colours, as orange, blush, white, purple, green, crimson, scarlet, and some have two and three colours connected in the same plant.

There are, in all, upwards of twenty species, which may be cultivated in the green-house, by planting the bulbs in pots in September or October, and placing them near the light, and then watering them sparingly until they begin to shoot.

JONQUILS.

This is a hardy race of bulbs, and produces very delicate yellow flowers early in May. There are different varieties, some of which are single-flowering, and others double. Their fragrance is very grateful, being similar to that of Jasmines. The bulbs may be planted about two inches deep in the flower borders, or in pots, in October, or before the setting in of Winter; they flower better the second year than in the first, and, therefore, should not be moved and replanted oftener than once in three years.

P. kumei has beautiful large double dark blush-coloured flowers.

P. paradoxa fimbriata, produces fringed double red flowers, which are very beautiful.

These are all hardy, and may be planted about four inches deep in the garden, in October or November. The flowers exhibit themselves to the best advantage, when planted on a bed that is elevated, and of a circular form.

The following are half hardy and half shrubby; these have been known to survive the Winter by being well protected, but are kept much better in a greenhouse; and they also exhibit their flowers to greater advantage than when exposed to the full sun.

P. moutan Banksii, or Tree Pæony, produces very large double blush flowers in abundance, with feathered edges to every petal. This variety is highly deserving of cultivation.

P. moutan rosea is a fine rose-coloured double variety, and produces very splendid flowers.

P. moutan papaveracea produces very large white flowers, with pink centres. This splendid variety frequently bears flowers from nine to eleven inches in diameter.

Besides the above, are several others of various colours, some of which are semi-double.

TULIP.

"For brilliant tints to charm the eye,
What plant can with the TULIP vie?
Yet no delicious scent it yields
To cheer the garden, or the fields;
Vainly in gaudy colours drest,
'Tis rather gazed on than caressed."

The Tulip is a native of the Levant, and has been in cultivation nearly three centuries. It may be justly entitled the King of Flowers, for the brilliancy and endless combination of all colours and shades. The varieties of the Tulip are very numerous, and are divided into different classes. Those cultivated in regular beds by amateurs are rose-coloured, *bybloemen* and *bizarres*. There are a great

many beautiful varieties, denominated *Parrot Tulips*, which have notched petals, and striped or diversified with green ; and also some very dwarfish kinds, both single and double, which are generally cultivated in parlours and greenhouses.

Mr. T. Hogg, of Paddington, near London, has published a work, entitled, "A Treatise on the Cultivation of Florists' Flowers," which comprises the Tulip, Carnation, Auricula, Ranunculus, Polyanthus, Dahlia, German and China Asters, Seedling Heartsease, and New Annuals. In that work, which is dedicated to Queen Adelaide, the author remarks that the cultivation of the Tulip is one of the most fascinating and pleasing pursuits imaginable, and that when the "Tulip mania has fairly got hold of any one, it sticks to him like the skin on his back, and remains with him the rest of his life." He instances a Mr. Davey, of Chelsea, as being in his seventy-fifth year, and in whose breast the fancy for Tulips was so predominant, that in the Autumn of 1832, he was induced to part with a hundred sovereigns for one single Tulip, named "Miss Fanny Kemble." Perhaps a better definition of what constitutes the properties of a good Tulip, could not be given than a description of this precious gem, or "loveliest of all Tulips ;" but, lest my readers should conclude that the old gentleman was in his dotage, I would inform them that this favorite bulb was purchased of the executors of the late Mr. Clarke, with whom it originated, and that it had not only been the pet of its late owner, but had excited the envy and admiration of all the amateurs who went to view it.

"This precious gem, a *bybloemen* Tulip, was raised from one of Mr. Clarke's seedling breeders, and broke into colour three years ago ; it has produced two offsets since, and is adapted to the second or third row in the bed ; the stem is firm and elastic ; the foliage full and broad, of a lively green ; the cup large, and of the finest form ; the white pure and wholly free from stain ; the pencilling on the petals is beautifully marked with black or dark purple, and the feathering uniform and elegant ; it preserves its shape to the last, the outer leaves not sinking from the inner ; in a word, it is considered the first flower of its cast, and the best that has ever been produced in England."

The article in the work already alluded to, on the cultivation of Tulips alone, occupies ninety-six pages ; I, therefore, cannot attempt any thing more than an abridgement of the author's ideas on some important points. Those of my readers who may desire full information, are referred to the work itself, which may be obtained of Mr. G. C. Thorburn.

The following description may serve to govern the choice of amateurs : Tulips exhibited at the shows, are, in general, classed and distinguished as follows: *Flamed Bizarres*, *Feathered Bizarres*, *Flamed Bybloemens*, *Feathered Bybloemens*, *Flamed Roses*, *Feathered Roses*, and *Sels*, or plain-coloured.

A *Bizarre* Tulip has a yellow ground, marked with purple or scarlet of different shades ; it is called *flamed* when a broad or irregular stripe runs up the middle of the petals, with short abrupt projecting points, branching out on each side, fine narrow lines, called arched and ribbed often extend, also, from this broad side to the extremity of the leaves ; the colour generally appearing strongest in the inside petals ; a Tulip, with this broad coloured stripe, which is sometimes called beamed or splashed, is, at the same time, frequently feathered also.

It is called *feathered* when it is without this broad stripe ; but yet it may have some narrow lines, joined or detached, running up the centre of the leaf, sometimes branching out and curved towards the top, and sometimes without any spot or line at all ; the petals are feathered more or less round the edges or margin inside and out, the pencilling or feathering is heavy or broad in some, and light or narrow in others, sometimes with breaks or gaps, and sometimes close and continued all round.

A *Bybloemen* Tulip has a white ground, lined, marked, striped or variegated with violet or purple, only of various shades ; and whether feathered or flamed, is distinguished by the same characters and marks which are pointed out and applied to the Bizarred Tulips.

A *Rose* Tulip is marked or variegated with rose, scarlet, crimson or cherry colour, on a white ground ; and the

Feathered Rose is to be distinguished from the **Flamed** by the same rules as described before; the **Rose** is very often both feathered and flamed.

A *Self*, or plain-coloured Tulip, properly so called, is either white or yellow, and admits of no further change; other plain-coloured Tulips, whether red or purple, are called breeders, and are hardly worthy of being exhibited. Mr. Hogg informs us, that £100, say \$500, judiciously expended at the present time, will give a moderate sized bed, that shall contain the greater part of the finest varieties grown; such a bed as £250 would not have purchased twelve or fourteen years ago.

To describe minutely the mode of planting a regular bed of Tulips would exceed our limits; suffice it to state that the name of every bulb should be written in a book, and that they should be so classed as to have the varied colours to show advantageously; to this end, the tallest should be allotted for the middle of the bed, and others in regular gradations, so as to have the most dwarfish on the sides. The bulbs must be covered with good mould, to the depth of three inches from the top of the bulb on the sides of the bed, and about four inches in the middle. Let a small spoonful of clean drift sand be used around each bulb, and see that the bed be left sufficiently round from the middle to the edges. The beginner must understand that no unsightly tallies, or number sticks, are to distinguish the Tulips; but that he must adopt a sort of ground plan, dividing the whole bed into rows of seven bulbs across; for example, take and write down the names and places of the Tulips in the first row, and continue the same form all through to the other end of the bed.

Row 1st.

- | | | |
|--------|----------------------------|----------------------|
| No. 1. | Fenelon, - - - - - | this is a Bybloemen. |
| 2. | Duchess of Clarence, - - - | Rose-coloured. |
| 3. | Charlemagne, - - - - - | Bybloemen. |
| 4. | Louis the Sixteenth, - - - | Bybloemen. |
| 5. | Memnon, - - - - - | Bizarre. |
| 6. | Volney, - - - - - | Bybloemen. |
| 7. | Lady Crewe, - - - - - | Rose-coloured. |

Good fresh loam, taken from under healthy grass sods, is the most suitable soil for Tulips to grow in ; under which should be buried, to the depth of a foot, about two inches thickness of well rotted cow or horse droppings. The reason for placing the dung so low is, that the fibres may get down to it, (which they will do,) and that the bulbs may not be injured by it, as is apt to be the case if too much dung is used around them. The best time for planting the bulbs, is early in November, and the beds should be made a fortnight previous, in order that the earth may become sufficiently settled.

If severe frosts set in, after the Tulips show themselves above ground in the Spring, some protection should be given ; single mats placed over hoop bends answer very well ; and at the time of blooming, an awning should be erected over them, sufficient to screen the Tulips from the intense heat of the sun, which awning should be sufficiently spacious to admit of persons walking under it, to view the beautiful flowers to the greatest possible advantage.

TUBEROSE.

This fragrant and delightful flower has been cultivated in English flower gardens for upwards of two centuries ; there the bulbs are generally cultivated in pots early in the Spring, and transferred to the flower borders as soon as it becomes settled warm weather ; for they are very tender. They generally succeed very well here, if planted at once in the open borders towards the end of April, and produce flowers which are pure white, and highly odoriferous, on a stem from three to four feet high.

The bulbs produce a number of offsets, which should be preserved with the parent plants through the Winter, and then parted off and planted by themselves in April or early in May, to produce flowering roots for the ensuing year. These roots thrive best in a light rich soil, well pulverised, in which they should be planted about two inches deep, not forgetting to take them up again before the approach of Winter.

TIGER FLOWER.

Perhaps there is no flower treated of in this work, that is more beautiful than some of the species of the genus *Tigridia*. Like all Mexican bulbs, these are tender, and should either be cultivated in the greenhouse, or carefully preserved until settled warm weather, and then planted in good light soil, in a sheltered situation. A bed of these beautiful flowers would afford as much gratification to some, amateurs as a bed of Tulips.

The *Tigridia conchiflora* is of a rich yellow colour, tinged and spotted with white and crimson; the colours are very vivid and finely contrasted. The *Tigridia pavonia* is of the brightest scarlet, tinged and spotted with brilliant yellow. The corolla which is about four inches in diameter, is composed of six petals; the outer petals are thrown backward, and exhibit the blossom in all its splendour, which exists only a single day; but as if to compensate for its transient visit, each plant will produce numerous flowers; and where a bed of them can be collected, they will amuse their admirers for several weeks from July to September. In such a case, the bulbs may be planted about two inches deep; say nine by fifteen inches apart, towards the end of April or early in May, and taken up again in October, to preserve for planting the ensuing year.

OBSERVATIONS

ON THE

CULTURE OF BULBOUS ROOTS,

IN POTS OR GLASSES, IN THE WINTER SEASON.

THE culture of bulbous roots in a greenhouse, or light room, during the Winter, is comparatively easy, provided two points be attended to; the first is to keep them near the light, and to turn the pots or glasses round frequently, to prevent their growing crouded; and the second is, when the plants have done growing, to give them little or no water; for want of attention to these points, bulbs have been known to produce foliage, year after year, without showing any sign of blossoms.

All bulbs have a certain period of the year in which they are in a dormant state; this, in a state of nature, is invariably after the seeds are ripened; but as in a greenhouse, many of this family do not ripen seeds, the cultivator should watch the period when the leaves show indications of decay; at which time, the supplies of water should be lessened, and shortly afterwards the earth should be suffered to get dry and to remain so until the season returns, when the bulbs regenerate.

Many sorts of bulbs are best kept in pots, under the soil, in a dry shady place, and in the same temperature as that in which they are in the habit of growing; but others, such as the Hyacinth, Tulip, Narcissus, &c. may be taken out of the soil, and preserved as before directed, until the proper season for replanting.

Dutch bulbous roots intended for blooming in pots during the Winter season, should be planted during the months of October and November, and be left exposed to the open air until it begins to freeze; and then be placed in the greenhouse, or in a room where a fire is usually made. They

will need moderate occasional waterings, until they begin to grow; then they should have abundance of air in mild weather, and plenty of water from the saucers underneath the pots, whilst in a growing state; and should be exposed as much as possible to the sun, air, and light, to prevent the foliage from growing too long, or becoming yellow.

For this purpose, single Hyacinths, and such as are designated earliest among the double, are to be preferred. Single Hyacinths are by some held in less estimation than double ones, their colours, however, are more vivid, and their bells, though smaller, are more numerous; some of the finer sorts are exquisitely beautiful; they are preferable for flowering in Winter to most of the double ones, as they bloom two or three weeks earlier, and are very sweet scented. Roman Narcissus, double Jonquils, Polyanthus Narcissus, double Narcissus, and Crocuses, also make a fine appearance in the parlour during Winter. It is a remarkable circumstance of the Crocus, that it keeps its petals expanded during tolerably bright candle or lamp light, in the same manner as it does during the light of the sun. If the candle be removed, the Crocuses close their petals, as they do in a garden when a cloud obscures the sun; and when the artificial light is restored, they open again, as they do with the return of the direct solar rays.

Hyacinths and other bulbs intended for glasses, should be placed in them about the middle of November, the glasses being previously filled with pure water, so that the bottom of the bulb may just touch the water; then place them for the first ten days in a dark room to promote the shooting of the roots; after which expose them to the light and sun as much as possible; they will blossom without the aid of the sun; but the colours of the flowers will be inferior. The water should be changed as often as it becomes impure; draw the roots entirely out of the glasses, rinse the fibres in clean water, and also the glasses inside; care should be taken not to suffer the water to freeze, as it not only bursts the glasses, but often causes the fibres to decay. Whether the water be hard or soft, is of no great consequence; but soft, or rain water, is generally preferred, and it must be perfectly clear.

Forced bulbs are seldom good for any thing afterwards; however, those who wish to preserve them, may immerse them wholly in water for a few days; and then having taken them out, and dried them in the shade for a short time, they may be planted in a good soil, which will sometimes cause them to flower the second year. It does not clearly appear in what way the water operates when the bulb is wholly immersed; but it is certain that bulbs so treated increase in size and solidity, and have an incomparably better chance of flowering the second year, than those which have not been so treated; most probably their total immersion enables them to obtain a greater proportion of oxygen from the water.

Nosegays should have the water in which their ends are inserted changed, on the same principle as bulbous roots; and a much faded nosegay, or one dried up, may often be recovered for a time, by covering it with a glass bell, or cup, or by substituting warm water for cold.

Very fine Hyacinths have been grown in a drawing-room, in the following novel manner. A quantity of moss, classically called *hypnum*, and vulgarly fog, was placed in a water-tight box, about eight or nine inches deep, into which the bulbs were placed at the end of September, without mould and duly watered; the result of this experiment was highly favourable.

OBSERVATIONS
ON
THE GENERAL MANAGEMENT
OF
GREENHOUSE PLANTS.

Having already exceeded my limits, I am compelled to be brief in my observations on such ornamental plants as are generally cultivated in hot and greenhouses. This description of plants embraces those which are collected from various climates, and thrive best in a temperature and soil similar to that in which nature first produced them : hence they who propagate exotic plants, must provide suitable composts, and also separate departments, where the different degrees of heat may be kept up according to their nature and description. Some of these are raised from seed sown in the Spring, others by layers, suckers, and offsets detached from the old plants, and many by slips or cuttings, planted at different seasons of the year, according to their various natures and state of the plants. Many kinds require the aid of glass coverings and bottom heat, created by fresh horse-dung, tan, &c. See calendar and index.

Were I to attempt to give directions for the propagation of all the varieties of useful and ornamental exotic plants cultivated in various parts of our country, it would require several volumes. The catalogue of greenhouse plants alone, kept by the enterprising proprietor of the Linnean Botanic Garden at Flushing, occupies fifty pages of close matter ; it would, therefore, be impossible to do justice to the subject without dividing upwards of two thousand species of plants into classes, and treating of them under distinct heads ; I shall, therefore, not attempt in this edition to write largely on the subject.

In order to render this little work useful to those who

they convey the circulation of the sap in the former, as the veins do the blood in the latter; but it is by no means settled as yet by physiologists how the food of plants is taken up into the system, and converted into their constituent parts.

From the foregoing considerations and facts, it is evident, that, as air, heat, and moisture, are each essential to vegetation, that water should only be given in proportion as heat and air are attainable. In the Summer season, greenhouse plants may be exposed to the open air, from the early part of May, until the end of September, by being placed on the ledges of windows, or on a stand erected for the purpose, or in the absence of a nursery bed of flowering plants, they may be introduced into the regular flower-beds, to supply the place of such plants as may wither and die in the course of a Summer, by being turned out of the pots and planted, or plunged in the earth with the pots.

In the heat of the Summer season, plants generally require water every evening, and in the absence of dews, the earth about their roots may sometimes need a little in the morning; but experience shows, that the roots of plants more frequently get injured from being soddened with water, than from being kept moderately dry.

Having before intimated that exotic plants will generally thrive best in a temperature and soil similar to that in which nature first produced them, it may be necessary to remind the reader, that we have the means of obtaining suitable composts from our own soils, and from sand, decayed leaves, rotten dung, and various kinds of peat, bog, and rock mould; these ingredients being judiciously mixed and prepared, may be suited to all the various kinds of plants, and should be used as occasion requires.

As the roots of plants make considerable growth in the course of a Summer, it will be necessary to examine them by turning them out of the pots; this may be done early in September, at which time all matted and decayed roots should be pared off, and the plants shifted into larger pots, which being filled with suitable compost, and watered, will be ready for removal into the house on the approach of cold nights, which is generally early in October.

Greenhouse plants require an annual pruning, and should be occasionally headed down, in order that their size and appearance may be improved; the best time for doing this is soon after they have done flowering, and while they are in a growing state.

Having endeavoured to furnish my readers with the artificial means of preserving tender plants in a climate foreign to that from which nature first produced them, I shall call their attention to another class of plants well calculated for the windows of a house.

I allude to the many beautiful varieties of the Chinese Chrysanthemum; these are frequently cultivated in pots, and may be taken from the ground and put into pots, even when in full flower, without injury, and when the bloom is over, returned to the garden. In the Spring following, they will throw up an abundance of suckers.

The following list contains some of the best varieties of the Chrysanthemum, and are entitled to a place in every flower garden. In October and November, when the waning year has left our gardens comparatively cheerless, these, with their various colours, deck them out in gaiety, and prolong the semblance of Summer. They are perfectly hardy, and will brave our severest Winters.

From the Catalogue of W. Prince & Sons, Flushing, L. I.

The gold bordered red; the petals are red, striped with golden yellow	Semi-double quilled do	Quilled fine yellow
White quilled	Paper white	Sulphur do
Pale buff, or orange	Quilled light purple	Superb clustered do
Changeable, red and orange on same plant	Expanded do do	Small do
Lilac quilled.	Quilled yellow	Single flame yellow
Rose-coloured, or pink	Double Indian yellow	Quilled pink
Lilac and white, changeable; the flowers vary to lilac, to white with a purple centre, and to pure white	Double Indian white	Quilled Orange
Darker crimson, or Spanish brown	Dark purple	Early crimson
Straw coloured quilled	Early blush	Curled lilac
Golden yellow	Golden lotus	Two coloured incurv'd
Tasselled White	Quilled purple	Blush ranunculus
	Starry purple	Late quilled purple
	Park's small yellow fine	Tasselled lilac
	Quilled salmon	Tasselled yellow
	Semidouble quilled	Yellow waratah
	Pale orange	Pale lilac
	Two-coloured red	Large buff, superb
	Curled buff, or salmon	Barclay's
	Large lilac	Alton's
	Late pale purple	Sabine's

Chrysanthemums may be propagated from seed and cuttings, and each plant will produce several suckers which may be separated every Spring. As the flowers are liable to be injured by the rain in Autumn, it is advisable to take up a few plants, and place them in a light room or greenhouse, which will preserve them for some time.

Many people keep their late blooming plants in the house through the Winter ; this is a bad practice, as the heat and want of air will exhaust or destroy the plants altogether. If the flowers fade before hard frost prevails, it is best either to plunge the pots, into the ground with the plants, or to turn them out of the pots, and plant them, with the balls of earth entire, into the borders of the flower garden.

Early in May, such as may be intended for potting the ensuing season, should be divided at the roots, if not potted and planted, each kind separate. One single stem is sufficient for a moderate sized pot, if the object be to have bushy plants ; but if showy plants are desired, one of each of the varied colours may be selected for each pot, which should be sufficiently capacious to hold them without crowding them, as this will cause the plants to grow weak and slender. If such happens early in the Summer, a stocky growth may be produced by clipping the tops, and they will bloom in great perfection in their usual season.

INTRODUCTION TO THE

CATALOGUE OF GREENHOUSE PLANTS.

To promote brevity, and avoid tautology, I here submit the following statement :

That the directions accompanying our catalogue of Annual, Biennial and Perennial Flower Seeds, will apply to such plants in the green-house department as are ordinarily raised from seed.

That the directions annexed to the catalogue of Flowering and Ornamental Shrubs, for propagation by cuttings, layers, &c., are applicable to a great proportion of the

plants hereinafter described, and that the exceptions are shown in the monthly calendar.

That such Bulbous roots as are generally embraced in Greenhouse Catalogues, from their being adapted to artificial culture, have been already treated of, under each head, in numerous articles; to which the reader is referred.

That with the exception of Hot-house plants, which require a uniformly warm climate to perpetuate their existence, all such other tender and half hardy plants as need protection in Winter, may come under the denomination of Greenhouse Plants; some species however, notwithstanding this concession, may be preserved in frames, pits, cellars, or warm rooms.

That many of those species designated thus, § and thus † in our two first catalogues, are of such description; and as they have been treated of in the chapters thereto annexed, the following catalogue and explication will be necessarily brief, when compared with one general catalogue of exotic plants.

EXPLANATORY CATALOGUE.

Acacia. Of this and the *Mimosa*, which are by some considered as one genus, there are upwards of a hundred species and varieties, suited for artificial culture. The blossoms which are generally straw colour and yellow, except the most tender, some of which are crimson, succeed each other from February to June.

Agapanthus. A beautiful species of Lily, producing large blue flowers from April to June; some varieties have striped leaves and delicate white blossoms.

Aloe. Of this genus, there are numerous species and varieties, some of which are very curious, being possessed of all the varied forms and figures peculiar to succulent plants. Some species flower annually from March to September, and all, except the Century Aloe, blossom frequently; the colours are generally yellow, pink, and red. The singular figure and habit of these plants render them desirable for greenhouse culture.

Arbutus. European Strawberry tree. A half-hardy ever-green shrub, of which there are several species and varieties, producing crimson and pink blossoms, and fruit, which remain on the plant a considerable time.

Ardesia. Chinese Ardesia. This is generally cultivated as a hot-house plant; and, if kept in the greenhouse, should be placed in a warm situation. There are several species, producing oblong shining leaves, pink flowers and red berries, which are very ornamental.

Aster argophyllus. Musk Plant. A plant of no great beauty, but esteemed by some for its musky fragrance; leaves ovate, lanceolate, and silky beneath.

Aucuba Japonica. A half-hardy shrub, with pale green leaves spotted with yellow. It produces small purple blossoms, but is desirable for its foliage only: to preserve which in good condition, shade in the Summer is absolutely necessary.

Azalea. The Chinese species of Azalea are numerous and beautiful, producing blossoms of various hues, as white, purple, scarlet, yellow, &c., and some are striped and spotted, which succeed each other from February to May, under good cultivation.

Banksia. A genus of plants named in honour of Sir Joseph Banks, of which there are over twenty species, all curious in flower, and variable in foliage; colours, yellow and green. They generally blossom from May to August.

Beaufortia. There are two species of this beautiful shrub, yielding scarlet and pink flowers from the sides of their stalks, from May to July.

Bellis perennis. Daisy. This half-hardy dwarf species of which there are several varieties, as recorded in our Perennial Catalogue, are worthy of further notice, from their yielding thousands of button-formed flowers from January to July, or until checked by the Summer heat, from which they should be screened, by being planted in a shaded border in the Spring. The colours are white, red and variegated, and some, called hen and chicken Daisies, grow in clusters.

Bletia tankervillei. A delicate plant, producing spikes of purple flowers, similar to the Hyacinth, from April to July.

Bouvardia. Mexican Bouvardia. A beautiful plant, producing brilliant scarlet flowers from May to September, when carefully cultivated.

Boronia. There are several species of this plant, natives of New Holland; the flowers of some are star-like, rose-coloured and sweet-scented; at perfection in April and May.

Burchellia. A dwarf evergreen shrub, producing orange coloured flowers in large terminale clusters, from March to June.

Cactus. Of this family of plants there are numerous species supposed to be of different genera, from the variation of their character and habits. They belong to the hot-house, but succeed well in a warm room or good greenhouse. Some are formed into erect pyramids, others are of a trailing habit, and all produce from the sides of their succulent stalks and leaves, beautiful crimson, white, or pink flowers, from March to August.

Calceolaria. Of this species of delicate dwarf plants, there are several splendid varieties annually raised from seed; producing red, yellow and orange coloured flowers from April to August, when shaded from the noonday Sun; they will otherwise suffer from heat.

Calothamnus. A beautiful evergreen shrub, similar to a dwarf pine, producing scarlet blossoms from the old wood, from April to November.

Callicoma serratifolia. A beautiful plant, producing tufted yellow heads of flowers from May to July.

Camellia. Of this admired Winter-blooming genus of plants, there are several distinct species, the varieties from many of which multiply annually. Its durable glossy foliage, and splendid flowers, which excel those of any other plant, will insure it a pre-eminence in every greenhouse; as in good collections, flowers of various hues may be gathered; from October to May.

Cheiranthus. Under this title have been generally embraced all those fragrant and beautiful half-hardy species of Biennial Plants, known as Wall and Gilliflowers; the latter species is now however denominated *Mathiola* in our catalogues. The beautiful blossoms and delicious fragrance

of these families, from February to June, entitle them to more than a passing notice. Their perfumes are exquisite.

Cineraria cruenta. Canary Aster. A dwarf half-shrubby plant, producing purple blossoms in April and May.

Cineraria maritima. Silvery-leaved Ragwort, or Powdered Beau. A white plant, producing bright yellow globular flowers from April to June or July.

Cistus. Rock Rose. A half-hardy dwarf shrub, of which there are upwards of twenty species natives of Europe; the flowers, which are white and purple, multiply abundantly in May and June.

Citrus. Orange, Lemon, &c. This genus embraces the Orange, Lemon, Lime, Shaddock, &c. of each of which there are several varieties. They are indispensable in a good greenhouse, for their handsome evergreen foliage, most odoriferous blossoms, and beautiful golden fruit, which by careful cultivation may be kept constantly on the plants. Those varieties with variegated, yellow and green foliage, are very generally admired.

Clethra arborea variegata. A fine sweet-scented shrub, producing spikes of white downy blossoms; the leaves are oblong and serrated, having a gold-coloured edge.

Correa. A genus of dwarf shrubby plants, consisting of several species, producing their orange, white, red and green blossoms frequently in the Winter, and sometimes in May or June.

Coronilla glauca. A desirable greenhouse dwarf shrub, yielding numerous sweet-scented yellow flowers in clusters; from January to April. There are other varieties which blossom in Summer.

Cotyledon orbiculata. Cape Navelwort. A succulent plant, producing finger-like suckers and successional joints, which blossom annually; the curiosity of the foliage, however, is its chief recommendation.

Crassula. A species of dwarf succulent plants, producing scarlet and variegated wax-like flowers; from April to June or July.

Crinum amabile. A large beautiful flowering bulb, of which there are several species, chiefly calculated for hot-

house culture, where some varieties frequently yield three stems of beautiful crimson, purple or white flowers, in a year.

Daphne odora. A beautiful dwarf evergreen shrub, yielding white fragrant blossoms in many-flowered terminal heads, from December to March. There are other species and varieties, one of which has its leaves edged with yellow.

Dianthus. Under this name is embraced all the admirable species of Carnations, Picotees, Pinks, Sweet Williams, &c., recorded in our catalogue of Perennials; and which are in universal esteem for their fragrance and beauty, from May to August. They are all hardy, except the Carnation and Picotee tribes, which are well deserving greenhouse or frame culture.

Diosma. A dwarf genus of heath-leaved shrubs, producing numerous small flowers of a white lilac or pink colour; some varieties of which are sweet-scented, from March to May.

Dryandrus. To this genus belong several species, similar to the *Banksias*; they are delicate plants, producing orange and straw-coloured-thistle-like flowers in abundance.

Epacris. This is a native of New South Wales, of which there are several species, mostly erect growing plants, varying from two to four feet; the leaves are small, and the blossoms which in the varieties are crimson, pink, purple and white, are, under good cultivation, abundant from January to June.

Erica. Heath. Upwards of five hundred species and varieties of this plant are cultivated in Great Britain, where a continued succession of bloom is kept up from January to December; the most prominent colours are white, scarlet, purple, yellow and red. They are desirable plants to cultivate in any country, as they furnish material for the bouquet in Winter, but they must be screened from the noon-day Sun in Summer, and only moderately watered; as extremes of drought or moisture are destructive to this family of plants.

Erythrina. Coral Plant. There are several species of this plant, chiefly adapted to the hot-house, producing long spikes of crimson or scarlet flowers. Some keep them in

good condition in a greenhouse; they must, however, be well attended to, and frequently repotted, which will sometimes induce them to bloom two or three times in a year.

Euphorbia. There are several species of this plant adapted to the greenhouse; some of which are beautiful, especially the *E. splendens* and Poinsett's, scarlet bachel'd, or *Euphorbia poinsettii*. They flower freely from December to May, if kept in a warm part of the house.

Eupatorium elegans. A dwarf plant, producing white sweet-scented flowers early in the Spring; to promote bushiness, the plant, after blossoming, should be closely pruned.

Eutaxia myrtifolia. A beautiful little evergreen shrub; foliage small, but very neat, furnishing numerous red and yellow-coloured blossoms from March to May, under good culture.

Ficus elastica. India-rubber tree, and *Ficus australis*, are both evergreen plants, and grow luxuriantly in a greenhouse; the foliage, which is large and glossy, is pink on the under side.

Ficus. Fig Tree. A plant easily cultivated, of which there are many species and varieties, which kept in pots or tubs, in a temperature adapted to the Orange tree, will fruit freely, and ripen two crops a year.

Fuchsia. Ladies Ear-drop. Of this beautiful dwarf shrub, there are several varieties, producing clusters of small scarlet flowers, the stamens of which are encircled with a petal of purple; in bloom from April to September.

Gardenia. Cape Jasmine. A very popular evergreen plant, producing white fragrant rose-like flowers, from May to August. There are several species and varieties, some of which are more dwarfish than others; but all are desirable.

Gelsemium nitidum. Carolina Jasmine. A beautiful climbing evergreen, producing in the month of May, large yellow trumpet-like blossoms, of delicious fragrance.

Gloxinia. A desirable herbaceous plant, of which there are several varieties, yielding beautiful showy flowers; colours blue, lilac and white.

Gnaphalium. Everlasting Flower. Of this plant there

are several species or varieties, some of which yield clusters of yellow flowers, and others red ; from March to June.

Gnidia. Flax-leaved Gnidia. A dwarf shrub, of which there are several varieties, furnishing pretty tubular and corymbose straw-coloured flowers in the Winter and Spring.

Heliotropium. Peruvian Heliotrope. A species of soft shrubby dwarf plants, which, when cultivated in a warm situation, will yield abundance of delicate blue or purple flowers ; from January to September.

Helychrysum. Eternal Flower. There are several species and varieties of this plant, producing soft downy foliage and durable flowers, which, if cut before they are too far advanced, will retain their splendour several years.

Hibiscus Chinensis. This half-hardy herbaceous plant is worthy of a place in the greenhouse, as some species will yield flowers six inches in diameter, if well attended to and frequently watered ; the colours are crimson and blush.

Hoya. Wax Plant. A fine climbing species, adapted to the hot-house, the leaves being succulent, green and fleshy, require considerable heat and but little water. Some produce pink flowers, and others white, in April and May.

Hydrangea hortensis. The Hydrangea is a well known deciduous half-hardy soft-wooded shrub, producing large pink balls of blossom, when cultivated in a shaded border, from May to October ; and by mixing iron dust from a blacksmith's shop with the soil, or by growing the plants in swamp earth, or mould from decayed leaves, the flowers will become blue.

Hypericum. St. John's-wort. A half hardy little plant, producing yellow flowers from April to June. There are several species, some producing scarlet blossoms.

Illicium. Aniseed Tree. A dwarf species of shrub, the leaves of which when rubbed, smell like anise ; some produce red, and others yellow flowers, in March and April.

Indigofera. Indigo Tree. A free-flowering shrub, of which there are several species ; the flowers, which grow in long panicles, are red, yellow and pink.

Jasminum. Jasmine. Of this favourite genus, there are several species of various complexions. The Catalonian Jas-

green shrub ; leaves supra-decompound, with entire lanceolate leaflets ; a kind of foliage that is very rare.

Nerium. Oleander. A well-known and admired shrub, yielding clusters of rose-like flowers from May to September. The *Nerium splendens* is the most esteemed of the red varieties ; the true double white and striped are very rare ; but some of those cultivated for sale, producing semi-double flowers, are by no means desirable.

Olea fragrans. Dwarf Olive. This variety of the Olive recommends itself to notice, for its dwarf habit of growth, and from the foliage and white blossoms being highly odorous, from March to May.

Passiflora. Passion flower. Of this celebrated genus of climbing plants there are several species and varieties, which produce splendid flowers of various colours, red, blue, white, purple, scarlet, &c. beautifully contrasted, and some species yield fruit. They generally blossom from May to September, and some will flower in the hot-house in Winter.

Pelargonium. Geranium. The species and varieties of this beautiful genus is supposed to exceed a thousand, which are of every character, colour, and lineament, and some so beautifully blended as to astonish the beholder ; the agreeable fragrance also, of which many of them are possessed, will always render them favourites to amateur florists. The best blooming season, is from April, to June or July.

Pittosporum. A Chinese evergreen shrub, with handsome glossy foliage, yielding numerous white clusters of flowers in April and May, which are of delicious fragrance. There are several species, one of which is variegated.

Plumbago capensis. Cape Plumbago. A beautiful dwarf plant, with oblong leaves, yielding numerous spikes of showy blue flowers nearly all the Summer.

Polygata cordati. Heart-shaped Polygata. A beautiful little plant, producing abundance of rich purple flowers nearly all the Winter.

Protea. A beautiful race of plants, the foliage of which is very diversified, and the flowers also ; being red, white, straw, brown, green and purple, and most of these colours are frequently to be seen on the same plant ; from March to June.

Primula. In this genus are embraced all the varieties of the Primrose, Polyanthus, Auricula, Cowslip, Oxlip, &c. already inserted in our Biennial and Perennial catalogues. The flowers, which appear early in Spring, are mostly sweet-scented, and of various colours, red, white, yellow, lilac, purple, crimson, &c., which in some are beautifully variegated. The above are natives of England; besides which are two varieties, white and pink, natives of China, producing umbels of flowers; from January to May.

Pyrus Japonica alba, or *Cydonia Japonica*. One of the earliest flowering dwarf shrubs of the garden, producing beautiful blush flowers; there is another variety, which produces scarlet blossoms, already described in our catalogue of shrubs as an evergreen, which is a mistake, they being both deciduous shrubs.

Reseda. Mignonette. This fragrant little plant has been already treated of as an annual; it may, however, be kept under cultivation from January to December, by sowing seed at different seasons in a greenhouse or warm room.

Rhododendron. Rose Bay. A beautiful genus of plants, chiefly natives of India, furnishing clusters of flowers of various shades, as purple, scarlet or crimson, and these variegated in spots and flakes; from March to May.

Rosea. Rose. This Queen of Flowers, so universally admired, nature seems to have distributed over the whole civilized world; and varieties have been so multiplied of late years, as to render it difficult to make a judicious choice; many of the new varieties, however, being shy bloomers; are not so desirable for greenhouse culture as the common China Rose, a select assortment of which, carefully cultivated, will produce blossoms from January to December.

Rosmarinus. Rosemary. A fragrant half-hardy slender leaved plant, which has been held in great esteem for ages. In some parts of Europe it is customary to distribute sprigs amongst the guests, at weddings and funerals.

Ruella. A desirable plant, of which there are several species; they produce purple or scarlet tunnel-shaped flowers; from December to March.

Salvia. Mexican Sage. A free-blooming plant, producing in the different species, scarlet and blue flowers in spiked whorls; cuttings of which, if taken from stock plants in the greenhouse, early in Spring, and planted in good garden soil, will embellish the borders three or four months of the Summer.

Sempervivum arboreum. Treehouse leek. A succulent plant, similar to the common house-leek, on a dwarfish stem; by some admired as an evergreen.

Stapelia. A genus of dwarf succulent plants, producing beautiful purple, striped, freckled and star-like flowers, within six inches of the surface; in its varieties from May to November.

Stevia serrata. Vanilla-scented Stevia. This plant, although usually cultivated as an annual, is worthy of greenhouse culture, from its affording fragrant and ornamental materials for bouquets the whole Winter.

Strelitzia regina. Queen's strelitz. A beautiful dwarf plant, producing from a stalk from one to two feet long, several flowers of a bright yellow, contrasted with blue; from May to September.

Tecoma capensis. A perennial plant, producing orange-coloured trumpet flowers in clusters; very similar to the Bigonia tribe, towards the end of Summer.

Thea. Tea. Of this celebrated Chinese plant, which supplies a great proportion of the human family with their domestic beverage, there are two varieties. *Thea viridis* and *Thea bohea*. The plants when cultivated in a greenhouse, are by no means of rapid growth, nor are the flowers which are white, of any great beauty.

Tussilago fragrance. A half-hardy herbaceous Perennial plant, by some much esteemed for its heliotrope scented blossoms, which spring up in clusters from December to March.

Verbena triphylla, named in some catalogues, *Aloysa citriodora*. A deciduous shrub, generally admired for the fragrance of its leaves, which is its chief recommendation, the blossoms which are white, being small.


Verbena. Splendid Verbena. A tribe of plants increas-

ing in variety annually, and which already embrace every shade of colour, scarlet, blue, rose, lilac, white, pink, &c. Planted in the flower borders, they impart beauty and variety through the Summer, and cultivated in the greenhouse, they embellish it a great part of the Winter.

Viburnum tinus. Laurustinus. A much-admired half hardy evergreen shrub, producing clusters of white blossoms from January to May. There are other species very similar in habit, and one with striped leaves.

Viola. Violet. Of those beauties of the garden, some of which are denominated "Florist's Flowers," there are upwards of a hundred species and varieties. The early Violets are highly fragrant, and the variety and beauty of the Pansey tribe, almost exceed description or conception. As these splendid dwarf plants decorate the greenhouse and flower borders from January to December, they are worthy of careful cultivation.

Yucca, aloe-folia, and its beautiful variety, *variegata*, are desirable plants to cultivate, from their singular appearance, contrasted with other plants. Their blossoms, which are white, grow in spikes, but the plants do not flower much until several years old.

 The annexed article, entitled the Matrimonial Garden, is respectfully submitted as an appendage to the Flower Garden,

BY THE AUTHOR.

portant plant, called **ECONOMY**; it is of a thriving quality; cultivate this fine plant with all your care; for it adorns and enriches at the same time. Many overlook it, some despise it, and others think that they will never want it; it is generally overlooked in the gaiety and levity with which people enter this place, but the want of it is generally deplored with bitter repentance. There are two other plants of the same species, which are very closely connected, called **INDUSTRY** and **FRUGALITY**, and I must take leave to tell you, that unless both the male and the female partake largely of their branches, very little success can be expected; in this they must both unite. Take care that you provide yourself and partner with a supply of each as soon as possible after you enter the garden.

There are two or three paths which run much into one another, and deserve the closest attention of the softer sex; I mean **REGULARITY**, **EXACTNESS**, and **SIMPLICITY**.* Do not think, as some do, that when you have once got into the garden, you may be neglectful of these paths. Remember that your companion will see your neglect, which will affect his eye, and may alienate his heart. Enter on these departments, then, as soon as you enter the garden, and when you are once fairly in, you are in for life; the danger is that if you do not get into them at an early period, you will not find them afterwards. Near these walks is to be found that modest plant, called **HUMILITY**;

It is the Violet, "born to blush unseen,
And waste its sweetness on the desert air."

It appears of little worth in itself, but when joined with other virtues, it adds a charm to life, and spreads a fragrance around its wearer. Cultivate, then, with all your care, this sweet little plant, and you will find it prevent the growth of all poisonous and noxious weeds.

Allow me also to drop a hint on the subject of **CULTIVATION**, as connected with **PROPAGATION**, as that most probably will be your employment in this garden, sooner or later. Should you have the rearing of a young plant, remember

* In deportment as well as in dress.

that it is frail in its nature, and liable to be destroyed by every blast, and will demand all your care and attention. Should you witness a blast on its dawning beauties, Oh! how your fond heart will bleed with tenderness, affection, and sympathy! The young shoot will naturally twine around all the fibres of your frame. Should it live and thrive, spare no pains to "train it up in the way it should go." Weed it, water it, prune it; it will need all the cultivator's skill. Without this, many weeds and baneful plants will grow up with it, and blast your fondest hopes. Be ever mindful that this is a TRUST for which both parties are accountable.

Without careful cultivation, what can you expect but the most luxuriant growth of unruly appetites, which, in time, will break forth in all manner of disgraceful irregularities? What, but that ANGER, like a prickly thorn, will arm the temper with an untractable moroseness? That PEEVISHNESS, like a stinging nettle, will render the conversation irksome and forbidding? That AVARICE, like some choking weed, will teach the fingers to gripe, and the hands to oppress? That REVENGE, like some poisonous plant, replete with baneful juices, will rankle in the breast, and meditate mischief to its neighbour. While unbridled LUSTS, like swarms of noisome insects, taint each rising thought, and render "every imagination of the heart only evil continually?" Such are the usual products of unrestrained nature! Such the furniture of the uncultivated mind!

By all means, then, pay due attention to culture. By suitable discipline, clear the soil; by careful instruction, implant the seeds of virtue. By skill and vigilance, prune the unprofitable and over-luxuriant branches:—"direct the young idea how to shoot,"—the wayward passions how to move. The mature man will then become the chief ornament of the garden. Around him CHARITY will breathe her sweets, and in his branches HOPE expand her blossoms. In him the personal virtues will display their graces, and the social ones their fruit—the sentiments become generous, the carriage endearing, the life useful, and the end happy and peaceful.

THOUGHTS ON MARRIAGE.

"Marriage is to a woman at once the happiest and the saddest event of her life ; it is the promise of future bliss, raised on the death of all present enjoyment. She quits her home, her parents, her companions, her occupations, her amusements, every thing on which she has hitherto depended for comfort, for affection, for kindness, for pleasure. The parents by whose advice she has been guided, the sister to whom she has dared impart every embryo thought or feeling, the brother who has played with her, by turns the counsellor and the counselled, and the younger children to whom she has hitherto been the mother and the playmate, all are to be forsaken at one fell stroke ; every former tie is loosened, the spring of every hope and action is to be changed ; and yet she flies with joy into the untrodden path before her ; buoyed up with the confidence of requited love, she bids a fond and grateful adieu to the life that is past, and turns with excited hopes and joyous anticipation of the happiness to come. Then wo to him who can blight such fair hopes—who can treacherously lure such a heart from its peaceful enjoyment, and the watchful protection of home—who can coward-like, break the illusions that have won her, and destroy the confidence which love had inspired. Wo to him who has too early withdrawn the tender plant from the props and stays of moral discipline in which she has been nurtured, and yet make no effort to supply their place ; for on him be the responsibility of her errors—on him who has first taught her, by his example, to grow careless of her duty, and then exposed her with a weakened spirit, and unsatisfied heart, to the wide storms and the wily temptations of a vicious world."—*Ladies' Companion.*

OBSERVATIONS

ON THE

FRUIT GARDEN AND ORCHARD.

IN my preliminary observations on the subjects I have hitherto treated on, I am aware that it may appear to some, that I have not sufficiently urged the importance of a judicious selection of situation, exposure, aspect, soil, &c. My object in not insisting on a strict attention to these important points was, because I know, that though good land is abundant in this extensive country, it is impossible for every one to choose for himself; and rather than any disadvantages in these respects, should discourage proprietors of land from attempting to raise garden products, so necessary to the comfort and convenience of every family, I have endeavoured to show them how to use to advantage whatever land may surround their places of abode. As, however, some have a choice, it may be necessary to offer some further remarks on the subject.

The situation of an Orchard or Fruit Garden should be one that has the advantage of a free circulation of air, and is well exposed to the South, also to incline a little to the East, and South-west. When the situation is low and close, the trees are very liable to become mossy, which always injures them, by closing up the pores of the wood; they are also more liable to be affected by blight. Although having an Orchard closely pent up by trees, &c., is injurious, nevertheless a screen of forest trees, at such a distance from the fruit trees, as that the latter will not be shaded by them, is of very great service in protecting the trees in Spring from severe cold winds.

A good strong loamy soil, not too retentive of moisture, to the depth of thirty inches, or three feet, is most suitable for an Orchard. Great attention must be paid to the substratum, so that the ground is well drained, for if the top soil be ever so good and the bottom be wet, it is a very rare case to find that the trees will prosper for many years, before they begin to be diseased and go to decay. As it is so indispensably necessary to the success of fruit trees that the bottom be dry, if it be not naturally so, it must be made so, by judicious draining.

When it is necessary to make the bottom dry by draining, it must be done for some time before the trees are planted. In performing this work, the ground must be trenched, and when the trench is open, stone, or brick-bats, &c. must be laid over the bottom to the thickness of six inches, a little coal ashes, or small gravel, must be sprinkled over the top of the stones, &c., and then the surface be gently rolled. Also drains may be made in different directions, so that any excess of moisture can be taken entirely away from the ground.

It is well known to most cultivators, that exposure of soils to the atmosphere greatly improves them, as is experienced by ridging and trenching. Where the soil is stiff and stubborn, small gravel, sand, coal ashes, lime, light animal and vegetable manure, and other light composts, are very appropriate substances to be applied, and will, if carefully managed and well worked into the ground, soon bring it into a proper condition for most purposes.

Previous to laying out an Orchard or Fruit Garden, the soil should be manured and pulverized to a great depth. It should be made sweet, that the nutriment which the roots receive may be wholesome; free, that they may be at full liberty to range in quest of it; and rich, that there may be no defect in food.

If Orchards be made from meadows or pasture lands, the ground should be improved as much as possible by manuring, trenching, ploughing, &c. If this is not done to its full extent, it should be done in strips of at least six feet in width along where the fruit trees are to be planted, and at

the time of planting let the holes be dug somewhat larger than is sufficient to admit the roots in their natural position and of sufficient depth to allow of a foot of rich and pulverized mould to be thrown in before the trees are planted.

In transplanting fruit trees, they should be placed two or three inches deeper than they were in the nursery bed, and the earth intending for filling in, should be enriched and well pulverized by mixing in some good old manure, and if any leaves, decayed brush, rotten wood, potatoe tops, or other refuse of a farm be attainable, let such be used around the trees in filling, taking care that the best pulverized mould be admitted among the fine roots. The trees in planting should be kept at ease, and several times shaken, so as to cause an equal distribution of the finer particles of earth to be connected with the small fibres of the roots; and when completely levelled, let the ground be well trodden down and moderately watered, which should be repeated occasionally after spring planting, if the weather should prove dry.

As some difference of opinion exists among practical men as to the best time for planting fruit trees, the following extract from Mr. Prince's Treatise on Horticulture is submitted :

"SEASONS FOR TRANSPLANTING.—Spring is the season when we find the most pleasure in making our rural improvements, and from this circumstance probably it has become the general season for planting trees, but experience has proved the Fall planting to be the most successful, especially in those parts of the United States which are subject to droughts, as the trees planted in Autumn suffer little or none from drought, when those set out in Spring often perish in consequence of it. Notwithstanding, with regard to those fruits that have been originally brought from warmer climates, such as the Peach, Apricot, Nectarine, and Almond, which are natives of Persia, Armenia, &c., it is necessary for us to consult the operations of climate also; and, from a consideration of those attendant circumstances, I have come to the following conclusions. In localities

South of New-York, the Fall season is preferable only for the Apple, Pear, Plum, Cherry, Quince, and all other trees of Northern latitude ; whereas, the Spring is to be preferred for the Peach, Apricot, Nectarine, and Almond, which for the reasons before stated, might, during severe Winters, suffer from the intensity of the frosts. Still I do not mean to assert, that trees of those kinds are certain to be injured by the Winter, as in very many seasons they are not in the least affected ; still they are exposed to vicissitudes which may or may not occur. Many gentlemen, however, of excellent judgment, make their plantations in the Autumn, which only serves to prove, that even in the most intelligent minds, a diversity of opinion exists.

"TREES, &c. ON THEIR ARRIVAL AT THE PLACE OF DESTINATION.—As soon as the trees arrive at the place where they are to be planted, let a trench be dug in cultivated ground, the bundle unpacked, and the roots well wet, and immediately covered with earth in the trench, observing to make the earth fine that is spread over them, so as not to leave vacancies for the admission of air to the dry roots, it having been found by experience that the thriftiness of trees the first year after transplanting, depends much on the fine fibres of the roots being kept moist, and not suffered to dry from the time they are taken up until they are replanted ; their increase, therefore, must depend principally on the subsequent management on their arrival at the place of destination : for if, when the bundles are unpacked, the trees are carelessly exposed to drying winds, the young fibres of the roots must perish, and the trees, if they live at all, cannot thrive the first season, as they can receive little or no nourishment until these fibres are replaced.

"TO CAUSE THE TREES TO THRIVE.—The ground where they are planted must be kept cultivated ; young trees will not thrive if the grass be permitted to form a sod around them, and if it should be necessary to plant them in grass grounds, care must be taken to keep the earth mellow and free from grass for three or four feet distant around them,

and every Autumn some well rotted manure should be dug in and around each tree, and every Spring the bodies of the Apple, Pear, Plum, and Cherry Trees, and others that it is particularly desirable to promote the growth of, should be brushed over with common soft soap, undiluted with water; this treatment will give a thriftiness to the trees surpassing the expectation of any one who has not witnessed its effect. Should the first season, after transplanting prove dry, regular watering will be necessary, as from neglect of proper attention in this respect, many lose a large portion of their trees during a drought."

Such kinds of fruit trees treated upon in this work, as may require any other than good ordinary soil, may be supplied, by judicious management; and if a proper attention be paid to the situation and aspect in arranging a Fruit Garden, each kind may be so accommodated as to promote its fruits' ripening earlier or later than the ordinary season, by varying the aspect; but Grape Vines, or other tender fruits, should not be planted where the Sun's influence does not fully operate.

Where there is a great extent of close fencing or wall, it is advisable to plant trees of the same kind against different aspects. Such as one or two May Duke Cherries against a South aspect, which will ripen earliest; next, against either an East or West, and lastly, against a North aspect; by observing this method with Dwarf Cherries, Plums, Gooseberries, Currants, &c the fruit will ripen in succession, and thus a supply of them is considerably lengthened. The early blooming fruit trees will sometimes need protection in warm aspects; for which arrangements may be made by keeping awning, matting, netting, &c. at hand, to shelter them with, in threatening weather, or to screen them from the intense heat of the Sun after a frosty night; this, with a sprinkling of water, as the air gets warm, will often prevent any serious consequences from slight frost.

Those who have various soils, should suit them to the different kinds of fruit. Apples and Pears require a strong loam, but rather the lightest for the Pear. Apricots, Cherries, Peaches, Plums, and Nectarines, a good deal lighter

than for the Apple and Pear. Such fruits as may require peat, bog, or any other extraordinary kinds of earth, will be noticed as we proceed

OBSERVATIONS

ON INSECTS, AND DISEASES TO WHICH FRUIT TREES ARE LIABLE.

MUCH may be written relative to the various diseases to which fruit trees are liable, and also to the prevention and destruction of the various kinds of reptiles and insects, which very frequently deprive us of the first fruits of our garden. The preventive operations are those of the best culture. Autumn ploughing, by exposing worms, grubs, the larvæ of bugs, beetles, &c., to the intense frost of our Winters, and the moderate use of salt, lime, ashes, &c. are beneficial. Insects may be annoyed, and sometimes their complete destruction effected, by the use of soap-suds, lie, tar, turpentine, sulphur, pepper, soot, decoction of elder, walnut leaves, tobacco, and other bitter and acrid substances; but perhaps the most effectual way of keeping some of the most pernicious kinds of insects under, is to gather up such fruit as may fall from the trees, before the insects have an opportunity of escaping into the earth, or to other places of shelter.

Where trees are planted in a bad soil, or unfavourable situations, they often become diseased; when this happens, the best remedy is good pruning, and keeping the trees clean, by a free use of soap and water. If that will not do, they may be headed down, or removed to a better situation. Barrenness and diseases are generally produced by the bad qualities of earth and air, by a want of water, or by the inroads of insects. These incidents generally show themselves in the early part of the year. Leaves and shoots of any colour but the natural green; curled and ragged leaves; branches in a decaying state; shoots growing from the roots, instead of from the stem or trunk; the stem diseased

in its bark, and gum oozing from various parts thereof, are all proofs of the existence of disease. The Peach tree is subject to a disease called the yellows; and the discoloured leaves and feeble branches are often ascribed to the worms which so frequently attack the root; where these are found, they may be removed by a knife or chisel; but if it should appear that the tree is diseased, it should be removed, to prevent other trees from being infected. The Pear, and also the Quince, and sometimes other trees, are subject to the fire blight; this malady may be completely checked on its first appearance, by cutting off and immediately burning the injured branches. Generally speaking, careful pruning, cleaning the bark all over with a brush, applying soap or tobacco water to the leaves, and occasionally putting good earth and good manure to the roots, will remedy most diseases in fruit trees; removing them from a bad to a better soil, will, of course, effect this, where it proceeds from a poorness of land; for the old adage, "remove the cause, and the effect will cease," will be here exemplified. To cure the oozing of the gum, nothing is more necessary than to cut away the diseased parts of the bark; and by thus assisting nature in casting out the excrementitious, or noxious juices, a complete cure may be effected.

When a tree is affected by mildew, let it be immediately sprinkled with soap-suds, and then be dusted over with sulphur and tobacco dust, or snuff; at the same time, dig around the tree, and examine the soil, and sub-soil; if it be wet and canker, it should be taken away, and replaced with good healthy soil, and the ground drained; if, on the contrary, the ground be dry, give it a plentiful watering; the same remedy may serve as a preventive of the extension of blight, if taken in time. When any canker is observed, the part affected must, at the time of pruning, be cut clean out, and the part thus dressed be pared, so that no water be able to lodge in the wound; when this is done, let a quantity of soot be mixed up with water, after which, let a little train oil be well worked amongst it, but so that the mixture finally remain stiff; this may be plastered over all the wounds that have been pruned. The application of this

mixture keeps out the wet from the wounds, where it would be likely to lodge, and both the soot and oil promote vegetation. When trees are cankered from having a bad sub-soil, it is in vain to apply any remedy till the ground is properly drained, and some fresh soil mixed with the natural soil, also the tree replanted. When trees are known to be so situated as to be particularly liable to the attacks of insects or disease, they should be attended to at the time of Winter or early Spring pruning, in order to destroy the insects in their larvæ state.

The following compositions have been known to protect fruit trees from the attacks of numerous insects, by being used as a wash to the trees immediately after pruning. The constitution of some trees will bear a much stronger mixture of ingredients than others; but the proportions, as hereafter described, will not be injurious to any, but will be effectual in the destruction of the larvæ of insects.

For Apricot, Nectarine, and Peach Trees.—To eight gallons of water add one pound of soft soap, two pounds of common sulphur, and half an ounce of black pepper.

For Apple, Cherry, Pear, and Plum Trees.—To four gallons of water add one pound of soft soap; two pounds of common sulphur, two ounces of tobacco, and one ounce of black pepper.

For Figs and Vines.—To four gallons of water add half a pound of soft soap, one pound of sulphur, and a quarter of an ounce of black pepper.

All these ingredients must be boiled together for twenty minutes at least, and when in a lukewarm state, applied to the bark of the trees with a suitable brush.

The most destructive enemy to our fruits, is the Curculio; this insect passes the Winter in the earth in a chrysalis state, and if suffered to remain unmolested by the gardener, will be ready to commence his attacks at about the time the blossoms appear on our fruit trees. The eggs are deposited in the Apple, Pear, and all stone fruit, at a very early stage of their growth; these eggs soon hatch, and small maggots are produced, which exist in the fruit, causing it to

drop off prematurely, with the little enemy within. If this fruit be gathered up, or immediately devoured by hogs, geese, or other animals, a check may be put to their ravages in succeeding years: but if suffered to remain on the ground, they will supply food to myriads of their destructive race, which may not be so easily extirpated.

The canker-worm is another enemy to our fruits, for the destruction of which many experiments have been tried. Some apply bandages round the body of the tree, smeared over with tar or ointment, to annoy or entrap the females in their ascent to the tree; but as these tormentors are frequently on the move from November to the end of June, this must be a very tedious as well as uncertain process. As this insect is supposed to exist within four feet of the trunk of the tree, and not more than three or four inches from the surface of the earth, good culture, and a moderate use of lime, ashes, or any other pernicious ingredient, is the most likely way to destroy them.

The bark-louse is another pernicious insect; they resemble blisters, and are so near the colour of the bark as to be imperceptible; they often prove fatal to the Apple tree, by preventing the circulation of the sap. These insects may be conquered by washing the trees with soap-suds, tobacco water, lime water, or brine, or a wash may be made of soapy water and lime, thickened to the consistence of cream or paint, with sifted sand or clay, which may be applied with a brush to the trunk and limbs of the trees; this should be done at the latter end of May, or early in June, and the cracks in the bark should be completely covered.

The Apple-tree borer is said to deposit its eggs beneath the surface of the soil, and the worms are often to be found in the Spring of the year, by digging round the tree, and clearing away the earth to the roots, and may be taken out with a knife or gouge, and destroyed. After the worms are removed, the wounds should be covered over with grafting clay and wood ashes mixed, and the earth then returned to the roots of the tree. Some use bricklayers' mortar early in the Spring, around the base of the tree, so as to cover the part where the deposit is made, and prevent their attacks.

Although our limits will not allow of a further description of the various sorts of insects which injure our gardens, and frequently destroy the fruit of our labour, I cannot forbear directing the attention of our citizens to the importance of saving all kinds of ashes. If all agriculturists and horticulturists were to offer an inducement to the inhabitants of large cities, to save their ashes in a dry state, they would be supplied not only with a valuable manure, but an antidote for many kinds of insects; and our citizens would be at a less risk from fire, by having a brick vault on their premises for safe keeping them. In England, a private dwelling is not considered complete without an ash-vault; and a good farmer would dispense with his barn, rather than be destitute of an ash-house. I have known farmers to supply the cottagers with as much peat as they could burn, on condition of their saving them the ashes; and there are some that will keep men under pay throughout the year, burning peat for the same purpose; and any thing that has passed the fire is so valuable, that a chimney-sweep will frequently clean chimneys for the sake of the soot, which is conveyed miles into the country, and sold at a price sufficient to reward the collectors, besides paying all expenses; even the house-keepers' ashes in cities is a marketable article at all times, at from ten to twenty-five cents per bushel, when kept dry and clean, and a guinea a load was formerly the common price in the villages of Berkshire and Hampshire.

While on this subject, I would urge the importance of a Spring dressing of ashes. If cultivators were to prepare turfs from tanners' bark, peat-earth, coal dust mixed with clay, cow dung, &c. and get them dried in the Summer season, these, by being preserved through the Winter, may be burned around fruit orchards, while the trees are in blossom, and if the fires are properly managed, a smoke may be kept up, by heaping on damp litter every night; this will prove pernicious to such insects as may reside in the trees, and the ashes being spread on the ground, will serve as a means for the destruction of others. An orchard thus managed every year, will need no other manure. The smoking should be effected first on one side of the plantation, and afterwards

on the other, or heaps may be prepared in different parts of the orchard, and fire applied according as the wind may serve, to carry the smoke where it is most necessary. I know a gardener in the neighbourhood of New-York, who saved his Plums and Nectarines by burning salt hay, after its having been used as a covering for his Spinach; and I have no hesitation in recommending it as an excellent remedy for securing fruit trees from insects, especially if some coarse tobacco could be procured to add to it. The damper the materials are, in moderation, the more smoke they will create; and if a little tar, pitch, sulphur, or other pernicious combustible be sprinkled amongst them, it will be beneficial. This subject appears to me of the utmost consequence to the farmer, as well as to the community at large; I, therefore, cannot forbear offering some further observations.

It must be acknowledged, that although this country contains an abundance of wood, coal and peat, as well as almost every other description of fuel, that the poor of our large cities, in general, suffer greatly from cold; and if all the tales of woe could be sounded in the ears of a sympathizing community during our severe Winter, I am persuaded it would arouse them to the consideration of a remedy. It is an acknowledged fact, that the poor of Europe are cheaper and better supplied with fuel than those of this country. This arises, in a great measure, from the circumstance of ashes being held in high estimation by agriculturists; they are consequently a saleable article in their large towns and cities, at a price equal in some instances to half the cost of a Winter's fuel.

Now I would ask, how is it that ashes are not as valuable to the farmer here, as they are in Europe? The extreme heat of the Summers must certainly engender insects in equal if not greater proportions; and as respects manure, it must be scarcer in some parts of this extensive country, than it is in the densely populated countries of Europe. Perhaps some may answer, that ashes are already used by our cultivators to a considerable extent; but I would remind such, that from the circumstance of their being mixed up with other manures, and exposed to all sorts of weather, (as in

our city,) they lose their virtue, so that a load may not be worth more than a bushel would be, if kept dry and clean.

The farmers of Europe consider peat ashes of more value than any others, and I am persuaded that could they be fairly tested by some of our best cultivators great good may result to the community. If the farmers in England can afford to keep men under pay, perpetually burning peat for the sake of the ashes, it is natural to suppose that the poor of our community may be placed in easier circumstances as respects the article of fuel. Thousands of acres of land are to be found in the States of New-York and New Jersey, and within a few miles of this city, which abound with peat earth; and the owners of such have already begun to explore their treasures of this description. Good peat is now to be had in the city at the low price of eight cents per bushel, or three dollars per chaldron. It burns well in all sorts of stoves and grates, whether made for wood or coal, and also on the hearth; and if the ashes are not used to any better purposes than other ashes have hitherto been, it is the cheapest fuel known. I am persuaded that this subject is worthy of serious consideration, and if the editors of the different papers would arouse the public attention, so as to enlist some of our most active citizens to a consideration of the subject, incalculable good may result to the community at large.

If the public authorities of our cities, and all those who distribute fuel amongst the poor, gratis, would give them peat instead of wood, it would be much cheaper, and would answer every purpose to the consumers. In such cases twelve bushels may be given in the first Winter month to each of the applicants, instead of wood, with a strict injunction that they save their ashes in a dry state, in order to their being taken in exchange for a future supply of peat. It could be easily ascertained how much ashes twelve bushels of peat would make, and if a strict attention be paid to the conditions of exchange, it would soon be discovered which of the applicants was the most entitled to the distributor's bounty. The same sheds which it would be necessary to provide for housing the peat, could be used as a deposit for

the ashes. If such sheds be conveniently constructed to hold each a moderate quantity, the first which is emptied of peat may be filled with the first ashes that are returned in exchange for a future supply of fuel, and they could be all used for the same purpose as they become empty. These ashes, when fairly tested, may become a merchantable article in Europe ; and it is very probable that farmers may be induced to take them in exchange for future supplies of peat ; they could, however, be conveyed into the country at a trifling expense, and would no doubt meet a ready sale.

OBSERVATIONS

ON TRAINING AND PRUNING FRUIT TREES AND VINES.

In training and pruning fruit trees and vines, particular attention is required. To supply a tree with a sufficiency of vegetable juices, there must necessarily be living bark and wood, in an uninterrupted succession from the root to the extremities of the branches ; pruning therefore, is useful to remedy any defect, as well as to take off superfluous wood, and prevent unnecessary waste of the sap. Pruning may be performed at different seasons of the year, according to the kinds of fruit which will be shown under each head, as we proceed.

In the Spring or Summer pruning, be careful not to destroy the germs of future fruits ; but merely remove all unserviceable sprigs. In the Winter season, make your selection from the wood shoots of the preceding year ; keep those which appear the most healthy, and cut away those which seem redundant. Beginners had better prefer the Spring, as the buds will then be a guide for them to go by ; but this business must not be delayed too late in the season, as some kinds of trees and vines are apt to bleed from being pruned untimely. When the sap rises in Grape Vines, &c., before the wound is healed, bleeding ensues, and it is not easily stopped. When this happens, sear the place, and cover it

with melted wax, or with warm pitch spread upon a piece of bladder; or peel off the outside bark to some distance from the place; and then press into the pores of the wood, a composition of pounded chalk and tar, mixed to the consistence of putty. Vines will bleed in Autumn as well as in Spring, though not so copiously. The best preventive is timely or early pruning in the Spring; and not pruning until the wood is thoroughly ripe in Autumn.

With respect to the manner in which vines, and some particular kinds of trees should be trained, opinions are at variance. Some advise training the shoots in a straight and direct manner, others in a horizontal manner, and others in a serpentine form, &c. If vines be trained on low walls or trellises, the horizontal or zigzag manner of training may be adopted. Horizontal training is that in which from a main stem, lateral branches are led out horizontally on each side.

It has been remarked, that in order to be a good trainer of vines, a man must have some forethought, and be capable of making his selection, as the plants shoot. He must predetermine how he shall prune, and where he shall cut at the end of the season; and so, as it were, fashion the plants to his mind. He has this more effectually in his power, with respect to the vine, than any other fruit tree, on account of its rapid growth and docility.

In pruning vines, cut generally two inches above the bud. Some cut nearer, even as near as half an inch, which is apt to weaken the shoot of next season, and sometimes to prevent its vegetating at all, the buds being very susceptible of injury, on account of the soft and spongy nature of the wood. In the cutting out of old wood, be careful to cut in a sloping direction, and to smooth the edges of the wood, in order to prevent its being injured by moisture. The pruning being finished, let the loose, shreddy, outward rind on the old wood be carefully peeled off, observing not to injure the sound bark, and clear the trellis of branches, leaves, tendrils, &c. Let the shoots and branches be afterwards regularly laid in, at the distance above specified, particularly the young shoots that are expected to bear next season. As to others, it is

not so material how near the young shoots be placed to the old, even though they sometimes cross them. Choose strands of fresh matting, or pack thread, to tie with; and observe to leave sufficient room for the swelling of the shoots and branches next season.

By attending to the proper pruning of fruit trees, every advantage is promoted, and by a judicious management in other respects, wood may not only be obtained but preserved in every part of the tree, and so that it will bear down to the very bole, which will evidently be greatly to the credit of the gardener, the benefit of the proprietor, and will be equally conducive to the beauty and welfare of the tree. While trees are young, it is necessary to lay a good foundation for a supply of bearing wood in future years, for when this is neglected, and they become naked, it is some time before a supply can be recovered. In shortening a branch, always take care to cut in a direction a little sloping, and the middles of all standard trees should be kept as open as possible. It is requisite to have a very sharp knife, that the cut may not be ragged, but clean, and in the operation be careful that the knife does not slip, so that another branch be cut or damaged.

The general pruning of fruit trees is indifferently performed by many persons at any time from Autumn to Spring, and it may be so done without any great injury to them, provided that mild weather be chosen for the purpose, and the wood be well ripened. Although it may be advantageous to prune trees early in the Winter, when the wood is well ripened, yet when the wood is green and the buds have not arrived at a mature state, it is requisite in such instances to defer pruning until Spring, taking care, however, that it is performed before the moving of the sap. The necessity of this arises from the circumstance, that as the wood is not ripened in Autumn, the sap is then in an active state, and will continue so until the frost, &c. cause it to become stagnant, and if the shoots were shortened whilst the sap was in motion, the buds would be considerably injured, and the tree weakened; such unripe shoots are also more liable to suffer by the severity of Winter, and when the pruning is deferred until Spring, all such parts as may have

been affected by the weather, can be removed to the extent to which the damage has been sustained. As the pruning of such unripe wood in the Autumn would be injurious, so it frequently is when it is done during Winter, and the more so, according to the severity of it ; because, whenever a cut is made on such green-wood, the frost generally affects it, as the sap is not dense nor the wood so firm, as to be able to resist its intensesness.

Whatever method is adopted in training trees, care should be taken to keep the two sides as nearly equal as possible ; this may easily be done, whether they are trained in the fan or horizontal method. For espalier trees the horizontal method has many advantages over any other ; the small compass in which the trees are obliged to be kept, requires such a direction for the branches, in order to make them fruitful. And were very high trellises formed, so as to admit of the trees being trained in the fan method, such would be very objectionable, by reason of the shade they would cause, and the trees would also be deprived of the benefit of a warmer temperature, which those less elevated receive.

As some young gardeners may not know what is meant by espaliers, it may be necessary to explain, that espaliers are hedges of fruit trees, which are trained up regularly to a frame or trellis of wood work ; they produce large fruit plentifully, without taking up much room, and may be planted in the Kitchen Garden without much inconvenience to its other products. For espalier fruit trees in the open ground, a trellis is absolutely necessary, and may either be formed of common stakes or poles, or of regular joinery work, according to taste or fancy.

The implements employed in pruning, and the manner of using them, are matters of moment. If the operation is commenced when the tree is young, and judiciously followed up, a good knife, a small saw, a mallet, and a chisel fixed on a six-foot handle, to trim the tops and extremities of the branches, are all the tools that are required. A large saw will be occasionally wanted ; but an axe or hatchet should never be employed, as they fracture the wood, bruise and tear the bark, and disfigure the tree.

BUDDING AND GRAFTING FRUIT TREES.

Budding and Grafting, Lindley observes, are operations that equally depend for their success upon the property that buds possess of shooting roots downwards and stems upwards; but in these practices, the roots strike between the bark and wood of the stock, instead of into the earth, and form new layers of wood, instead of subterranean fibres. The success of such practices, however, depends upon other causes than those which influence the growth of cuttings. It is necessary that an adhesion should take place between the scion and the stock, so that when the descending fibres of the buds shall have fixed themselves upon the wood of the stock, they may not be liable to subsequent separation. No one can have studied the economy of the vegetable kingdom, without having remarked that there is a strong tendency to cohesion in bodies or parts that are placed in contact with each other.

BUDDING, OR INOCULATING.

To bud trees, let the following method be adopted: procure a knife which has a thin blade, and a sharp ivory handle; the use of the blade is to prepare the buds, and the handle is used to raise the bark of the stocks, so that the buds can be easily inserted. Have some good strong bass in readiness, and then take some good thrifty sprigs from healthy trees of the sorts you intend to propagate. When all is ready, make a cut in the bark of the stock transversely, and from the middle of this cut make another downwards, at least two inches in length, so that the two cuts may be in the form of a T; then take one of your sprigs, and with expedition proceed to take off a bud: this is effected by entering the knife a little more than half an inch below the bud or eye; force your knife into the wood, drawing it under the bud, and cut the piece off across the shoot; then immediately let that part of the wood which was cut off with the bud, be separated from it, which may be readily done with

the knife, by placing the point of it between the bark and wood at one end, and holding the bark in one hand, pull off the woody part with the other, which will readily come from the bark, if the tree from which it was taken be in vigorous condition. Examine the bark, so as to be satisfied that the bud remains perfect; if there is no hole in it, let it be immediately inserted into the stock, observing for the reception of it, to raise with the handle of your knife the bark of the stock downwards on each side from the cross cut, and thrust the bud in between the bark and the wood, applying it as close as possible. As soon as the bud is put in its place, tie it round securely with bass, beginning a little below the cut, and proceeding upwards, till you are above the cross cut, taking care to miss the eye of the bud, just that it may be seen through the bandage of the bass. About a week or ten days after the stocks have been budded, they should be examined, when such as have united will appear fresh and full, and those that have not taken will appear decayed; in the former case the bandage may be left off, and in the latter case, the stock may be budded in another place, provided the first operation was done in the month of July or early in August, as these are two of the most preferable months for budding fruit trees in general. Budding is, however, often attended with success, if done early in September.

SCALLOP BUDDING is performed by cutting from a small stock, a thin narrow scallop of wood, about an inch in length, and taking from a twig a thin scallop of wood of the same length; this is instantly applied, and fitted perfectly at top and bottom, and as nearly as possible on its sides, and firmly bound with wet bass matting. This may be performed in the Spring, and if it fails, it may be done again in the month of July. The French practise this mode on roses.

GRAFTING.

Grafting is the taking a shoot from one tree and inserting it into another, in such a manner that both may unite closely,

and become one tree. These shoots are called scions or grafts, and in the choice of them, and the mode of preparing some descriptions of stocks, the following hints are submitted.

That those scions are best which can be taken from the lateral or horizontal, rather than from the strong perpendicular shoots. The shoots of Apples, &c., should be taken from healthy trees late in Autumn, or before the buds begin to swell in the Spring; and buried half of their length in the ground, or in a cool and dry cellar; there to remain until the season of grafting.

For some descriptions of trees, the stocks are headed down near to the ground. In Nurseries, Apples intended for standards, are generally grafted about nine inches high only, allowing them to grow up standard high, and forming their heads upon the second year's shoots. In cider countries, the stock is generally trained up standard high; and when grown sufficiently large for the purpose, it is grafted the height at which it is intended the head of the tree shall be formed. As respects trees in general, directions will be found under appropriate heads.

The business of grafting is generally performed in March and April: there are various methods of grafting, but the following are those most generally practised.

CLEFT GRAFTING.—This mode of grafting is generally practised on stocks of from one to two inches in diameter, and may be performed in the following manner:—Let the head of the stock be carefully sawed off at a part free from knots, and the top pared smooth; then with a thin knife split down the stock through the centre, to the depth of about two inches, and insert a wedge to keep it open for the reception of the scion. The scion must be prepared in the form of a wedge, with an eye, if possible, in the upper part, and inserted carefully, so that the inner bark of the scion and of the stock may both exactly meet. Large stocks require two scions, one on each side, and sometimes four are inserted. When done, tie them firmly together with bass, and then cover the grafted part with well prepared clay, in an oval form, and close it securely.

SIDE GRAFTING.—This mode is sometimes practised on those parts of a tree where a limb is wanting. There are two ways in which it may be performed. 1st. The scion may be prepared in the same manner as for splice grafting, and the bark and wood on the side of the stock cut sloping; the scion being then adjusted as carefully as possible, must be bound on and covered with clay. 2d. The scion being cut sloping, a cross-cut is to be made in the side of the tree on the top of a perpendicular slit; the bark of the tree above the cross-cut must be pared down slanting to the wood, and the bark raised, as in budding; the scion being then inserted, it must be bound fast, and covered with clay.

SPLICE, OR WHIP GRAFTING.—This mode is often practised on small stocks, and it succeeds best when the scion and stock are of an equal size. The scion, which should consist of young wood of the former year's growth, may be cut to the length of about four inches. This and the stock are each to be cut sloping, for an inch or more, and tongued. Tongueing consists in cutting a slit in the middle of the slope of the stock downwards, and a corresponding slit in the scion upwards; both are now to be joined, so that one of the sides, if not both, shall perfectly coincide, and then to be securely bound with bass matting, and covered with grafting clay, or composition. As soon as the scion and stock are completely united, the bass string may be removed.

SADDLE GRAFTING.—The celebrated Mr. Knight practised this mode of grafting on very small stocks. The upper part of the stock is prepared in the form of a wedge, by two sloping cuts, one on each side. The scion is prepared by splitting it upwards, and paring out the middle part on each side to a point. When the stock and scion are of equal size, the adjustment may be made perfect; but if unequal, one side must exactly meet. The whole is secured by a string of bass matting, and covered with composition or clay; but the string must be removed as soon as a perfect union has taken place.

ROOT GRAFTING.—This operation is often performed on grape vines, just below the level of the surface, by the usual

mode of cleft grafting. It is also performed on portions or pieces of root, where suitable stocks are scarce.

GRAFTING BY APPROACH.—The trees, or shrubs, to be grafted, must be growing very near to those which are to furnish the grafts. The limbs or branches of each tree, which are thus to be united, must be pared with a long sloping cut of several inches, nearly to the centre; and the parts of each tree thus prepared, are to be brought together, and finally secured by a bandage of matting, so that the bark shall meet as nearly as possible. The graft may then be covered with clay or composition; and when a complete union has taken place, the trees or shrubs may be separated with a sharp knife, by cutting off below the junction.

GRAFTING CLAY may be made in the following manner: Take equal parts of fresh horse manure, free from litter, cow manure, and good stiff clay; add to this a portion of hair, and work it together in the same manner as masons mix their mortar. It should be well beaten, and incorporated several days before it is required to be used.

TO MAKE GRAFTING COMPOSITION.—Take equal parts of rosin and beeswax, and a little tallow; melt these together and mix them, then pour the composition into cold water, and as it hardens, take it out and work it up with the hands until it attains a due consistence. It may be spread on brown paper, which cut into strips of suitable size, is quickly applied, and in cool weather may be warmed by the breath, so as to become adhesive.

ON THE

CHOICE OF FRUIT TREES IN THE NURSERY.

In the choice of fruit trees, all possible care and attention are necessary; for, to have trees that do not answer the expectations of the proprietor, is a great disappointment. As the young gardener may need such directions as are calculated to govern him in his choice, I shall endeavour to furnish them. Of whatever species or variety of fruit trees are wanted, choose those that are vigorous and straight

and of a healthy appearance. Whether they have been grafted or budded, be careful to select such as have been worked on young stocks. Grafts and buds inserted into old crooked stunted stocks, seldom succeed well. Trees that are healthy, have always a smooth, clean, shining bark; such as are mossy, or have a rough wrinkled bark, or are the least affected by canker, should be rejected. Canker is discoverable in the young wood, and generally two or three inches above the graft or bud. If the tree be an Apricot, Nectarine, Peach, or Plum, and any gum appears on the lower part of it, do not fix upon that. Let the tree you select (if a dwarf) be worked about six inches from the ground, and only one graft or bud should be upon each stock, for when there are more, the tree cannot be brought to so handsome a form.

In some of the following articles, I have shown that several descriptions of trees may be transplanted with safety, even when far advanced in growth. When trees of four or five years' growth, after heading down, that are healthy, and well furnished with fruit-bearing wood, close up to the centre of the tree, can be obtained, they will do very well; but great care is requisite in taking up, removing, and planting such. Let the tree be taken up with as great a portion of the roots as possible, taking care not to bruise, split, or damage them; for want of attention to these points, trees often become diseased. Whenever (notwithstanding all due caution) any roots have been accidentally broken, split, or otherwise damaged in taking up the tree, let them be cut off; or if they cannot be well spared, let the damaged or bruised part be pared clean with a sharp knife, and a portion of the following composition be spread over the wound, in order to keep the wet from it, which would otherwise injure the tree. To equal parts of soft soap and tar, add a little bees-wax; let them be boiled together, and when cold they may be used. The necessity of pruning-in and dressing mangled roots, is more particularly required in trees of the stone fruit, such as Apricots, Nectarines, Peaches, Plums, &c.; for without the application of some remedy, they gum at the roots, which defect, if not counteracted, very materially

injures the upper part of the trees, which may become so affected as never to recover afterwards; therefore, great care should be taken not to occasion such injury; and when accidents happen, all due caution and application are necessary to promote a healthy and vigorous growth.

A young tree, likely to do well, should have roots nearly corresponding to the branches; at least, it should have one strong root in a similar proportion to the bole of the tree, with a proper distribution of branching fibres. Healthy roots are always smooth and clear, the colour of them varies a little according to the sort of the tree, but the older the roots are, the darker the colour is.


After the tree is taken up, be careful in conveying it to the place where it is to be planted, so that the roots are not chafed or rubbed. If trees are to be conveyed a considerable distance, they should be well guarded by straw, or otherwise, in order to prevent injury. All damaged or bruised roots should be pruned as soon as the tree is taken up, but if it be necessary to prune away any sound good roots, such pruning should be delayed until the time of planting. In pruning away roots, always let them be finished by a clear cut, and in a sloping direction, letting the slope be towards the under stratum, so that the wet may not be allowed to lodge upon the part so cut. When trees are planted at an advanced season, in the Spring of the year, it will be necessary to prune the tops; and if trees are removed that have been trained three or four years, and are not properly supplied with young wood, they must be cut down either wholly or partially, in order to obtain a sufficiency. In practising this upon Apricot and Nectarine trees, &c., always prune so as to have a leading shoot close below the cut, as it is very rare they will push a shoot below, unless there be a lead. This attention is not so particularly required in the Pear, &c., as such will generally push forth shoots, although no leading ones were left: but in all kinds, the younger the wood is, the more certain are shoots to be produced. If a tree that has been under training for one or two years, should only have one good strong leading shoot, and two or three weaker ones which do not proceed from

it, let the weak shoots be pruned clean away, and shorten the strong one, from which a handsome head may afterwards be formed. For further directions, as respects pruning or planting fruit trees, &c., the reader is referred to the preceding articles on these subjects; and as respects any species of fruit in particular, directions will be found under its distinct head.

In order to assist the reader to make a judicious choice of fruit trees, I have furnished a short description of such species and varieties as are in great repute for every good quality. Previous to making this selection, I carefully perused "Prince's Pomological Manual," "Kenrick's American Orchardist," "Lindley's Guide to the Orchard and Fruit Garden," and Manning's descriptive catalogue of fruits; besides these important guides, I had the select catalogues of different nurserymen before me, and have chosen such only as have been most generally recommended. In doing this, I have had difficulties to contend with, the nature of which none but those who have duly considered the subject can form any idea. The facility with which seedling plants are raised, and the paternal fondness with which people are apt to regard their own seedlings, have occasioned hundreds of names to appear in the various catalogues, which tend not a little to swell the large and increasing list of fruits.

In many instances, the English, French, Spanish, and other names, provisional, local, and barbarous, are given to the same variety, consequently some fruits appear in the different catalogues under all the varied names; and the patience and labour necessarily requisite for ascertaining which are really distinct varieties, and which are most worthy of cultivation, are correspondingly great.

In making out the descriptive lists, I have generally adopted the names given in the catalogue of Mr. Michael Floy, of the Harlem Nursery, as a heading; and have caused the synonyms, or names by which the same variety is known, or has been called, to be printed in *italics*; thus, my lists of about 300 varieties of the various species of fruit, will embrace what has been deemed by some as different varieties, perhaps to the number of a thousand,

 IN preparing the following articles, the object has been to furnish such information as was thought best calculated to entertain, as well as to instruct the reader. Besides the authorities quoted, I have gleaned from those inexhaustible treasures to horticulturists, Loudon's Encyclopædia of Plants, and that of Gardening; but on account of the brevity necessarily observed throughout this work, it has been found impracticable to give many entire extracts; suffice it to say, that the historical facts are generally collected from these sources.

APPLE.

POMMIER. *Pyrus malus.*

THE Apple being so closely connected with our wants and enjoyments, is entitled to the first notice in the catalogue of our fruits, The Apple Orchard is in truth the vineyard of our country; and the delicious beverage that can be obtained from some of the varieties of this excellent fruit being calculated to cheer the invalid, as well as to strengthen the healthy, entitles it to high consideration. It is one of our oldest and best fruits, and has become completely naturalized to our soil; none can be brought to so high a degree of perfection with so little trouble; and of no other are there so many excellent varieties in general cultivation, calculated for almost every soil, situation and climate, which our country affords.

The Apple tree is supposed by some to attain a great age: Haller mentions some trees in Herefordshire, England, that attained a thousand years, and were highly prolific; but Knight considers two hundred years as the ordinary duration of a healthy tree, grafted on a crab stock, and planted in a strong tenacious soil. Speechly mentions a tree in an Orchard at Burtonjooice, near Nottingham, of about sixty years old, with branches extending from seven to nine yards round the bole, which in some seasons produced upwards of one hundred bushels of apples.

The Romans had only twenty-two varieties in Pliny's time. There are upwards of fifteen hundred now cultivated in the garden of the Horticultural Society of London, under name; the catalogue of the Linnæan Botanic Garden at Flushing, contains over four hundred; and one of our enterprising horticulturists, Mr. Wm. Coxe, of Burlington, New Jersey, enumerated one hundred and thirty-three kinds cultivated in the United States, some years ago. They are usually divided into dessert, baking, and cider fruits; the first high-flavoured, the second such as fall or become mellow in baking or boiling, and the third austere, and generally fruit of small size. Besides this division, Apples are classed as pippins or seedlings, pearmains or somewhat pear-shaped fruits, rennets or queen-specked fruits, calvilles or white skinned fruits, russets or brown fruits, codlings or falling fruits, and some are denominated burknots.

The Apple may be propagated by layers, and many sorts by cuttings and budding, but the usual mode is by grafting on seedling stocks of two or three years growth, and for dwarfing, on stocks of the Quince or Paradise Apple. All the principal varieties are cultivated as standards in the orchard, and should be planted from thirty to forty feet from each other, or from any other spreading trees, in order that the sun and air may have their due influence in maturing the fruit.

Many of the dwarf kinds may be introduced into the Kitchen Garden, and trained as espaliers, or dwarf standards. An Apple Orchard may be planted at any time after the trees are two years old from the graft; and as trees from young stocks will not come into full bearing until ten or twelve years old, they will bear removing with care at any time within that period.

Old Apple trees may be grafted with superior varieties, by being headed down to standard height: in very old subjects, most commonly, the branches only are cut within a foot or two of the trunk, and then grafted in the crown or cleft manner. In all the varieties of the common Apple, the mode of bearing is upon small terminal and lateral spurs, or short robust shoots, from half an inch to two inches long, which

spring from the younger branches of two or more years' growth, appearing at first at the extremity, and extending gradually to the side: the same bearing branches and fruit spurs continue many years fruitful.

PRUNING.—As from the mode of bearing, Apple trees do not admit of shortening in the general bearers, it should only be practised in extraordinary cases. If trees have not the most desirable form when three or four years old, they should be judiciously pruned to promote regular spreading branches. In annual pruning, the main branches should not be cut, unless in cases of decay; but all superfluous cross branches and dead wood should be taken out, and the suckers eradicated. Espaliers require a Summer and Winter pruning.

SELECT DESCRIPTIVE LIST OF APPLES.

SUMMER FRUIT.

AMERICAN SUMMER PEARMAIN, *Early Summer Pearmain.* This apple is of medium size and oblong form; its colour bright red on the sunny side, and on the opposite side yellow, streaked or blotched with red; the flesh is very juicy, tender, fine flavoured and excellent. It ripens early in August, and is good either for the dessert or for cooking. Tree a good bearer.

EARLY BOUGH, *Sweet Bough.* The size of this fruit varies from medium to large; its colour pale yellow; its form oblong; its skin smooth; flesh tender, juicy, sweet and excellent; ripens early in August.

EARLY CROFTON, or *Irish Peach Apple.* An Irish apple, of the middle size and flattish shape; of an olive green colour, much variegated with red; has a rich saccharine flavour; ripens in August; it is much esteemed for the dessert, and excellent also as a sauce apple. The tree grows well, and is not apt to canker.

EARLY HARVEST, *July Pippin.* A very early apple of bright straw colour; flesh white and tender; juice rich, lively, and very fine. The tree bears young, and makes a fine garden espalier; ripening its fruit in July and August.

EARLY RED MARGARET, *Red Juneating, Early Striped Juneating, Eve Apple of the Irish.* Fruit below the middle size; skin greenish yellow, richly and closely streaked with deep red; flesh white, juicy, breaking, sub-acid, very rich and agreeable; early in August.

RED ASPRACAN. This beautiful apple is of medium size and roundish; the skin is dark red, covered with thick bloom like a plum; the flesh is white, tender, and somewhat acid; at perfection early in August.

RED QUARENDEN, Devonshire Quarenden. Sack Apple. A much esteemed Devonshire apple; of medium size; skin of an uniform deep rich crimson, with numerous green dots intermixed; flesh of a brisk, pleasant, and peculiar flavour. A very desirable dessert apple; from August to November; tree very productive.

SPRING GROVE CODLING. Fruit of the usual *codling* shape; skin pale, greenish yellow, tinged with orange on the sunny side; flesh tender; juice saccharine, a little acid, mixed with a very slight perfume; good from August to November.

SUMMER ROSE, Harvest Apple. A very beautiful and excellent fruit, of moderate size and round form; the skin is yellow, striped and mottled with red; the flesh is sweet, juicy and fine; in July and August; tree a great bearer.

SUMMER PIPPIN, Pie Apple. This fruit in size and shape resembles the Fall Pippin; it differs in having a little more red on the sunny side, and in arriving at maturity about a fortnight earlier. It is a very popular apple in New Jersey.

WILLIAMS'S FAVOURITE RED. This apple originated in Roxbury, Mass.; it is of medium size, oblong form; the skin a bright and deep red; the flavour pleasant and agreeable. The tree is a good bearer, and its fruit commands a good price in the Boston markets; in August and September.

AUTUMN FRUIT.

ALEXANDER, Emperor Alexander, APORTA. Fruit very large, somewhat cordate, smallest at the crown; of a greenish yellow colour, striped or marbled with red; pulp tender, sweet, rich and aromatic; ripens in October, and lasts till Christmas. Though a large, hardy tree, it is a medium bearer, but a magnificent fruit.

AMERICAN NONPAREIL. A beautiful apple of medium size and oblong form; its colour yellow, streaked and stained with red on the sunny side; flesh firm, juicy and agreeable. A very fine market apple in October and November.

DOWELL'S PIPPIN. In size and form this apple resembles the Ribstone Pippin, but is more pointed at the head, and the eye is sunk in a more confined and deeper cavity; the skin is green, nearly covered with a clear thin russet, and a slight tinge of brownish red on the sunny side; an excellent dessert apple; from October to Christmas.

DOWNTON PIPPIN, E'ton Golden Pippin, Knight's Golden Pippin. The Downton Golden Pippin is a most abundant bearer, and the fruit extremely well adapted for market; it is rather larger than the common Golden Pippin; skin nearly smooth; yellow, sprinkled with numerous specks; flesh yellowish, crisp, with a brisk, rich, sub-acid juice. Ripe in October and November, and will keep good till Christmas.

DRAP D'OR OF FRANCE, Cloth of Gold. This apple is very large and handsome; its form globular; its colour a fine yellow, with dark

specks; its flesh white, firm, and rich flavoured. A most productive variety; in perfection from September to November.

ENGLISH CODLING, *Codling, of Coze.* Fruit very large and handsome; of oblong form; its skin a fine yellow, with red blush on the sunny side; its flesh white, tender, and of an agreeable acidity. A good marketable apple for the table, and for cooking; from September to November; tree handsome and productive.

FALL PIPPIN. Cobbett's Fall Pippin. *Reinnete Blanche D'Espagne, D'Espagne, De Rateau, Concombre Ancien, White Spanish Reinette, Casneasar.* This extremely valuable variety stands in the first class of Autumn fruits; being very large; its form is roundish oblong; skin smooth, yellowish green, tinged with orange; flesh yellowish, crisp and tender, with a very rich sugary juice. It ripens in October, and keeps well as a Fall Apple.

FAMEUSE, *Pomme de Neige.* A Canadian Apple of great beauty; in size medium; skin light green, stained with bright red; flesh white, very tender; juice saccharine, with a musky perfume; ripe in October, and will keep good till Christmas.

FRANKLIN GOLDEN PIPPIN. Fruit a medium size, conical, of a golden yellow colour, with gray and dark-coloured specks; it ripens in November, and continues till March; flesh firm, and highly aromatic; tree rather slender, and middling bearer, but an excellent fruit.

GOLDEN RUSSSET, *Aromatic Russet.* A dessert apple, of medium size, and of a pale copper-coloured russet; in great repute for its rich saccharine, aromatic, and slightly musky flavour. The tree is hardy and very productive; in October and November.

GRAVENSTEIN. Fruit rather large and compressed; of a yellowish green colour, striped with red; flesh crisp, and high flavoured; ripens in October, and lasts till April. This variety originated in Germany, and is considered the best dessert apple in that country.

KENRICK'S RED AUTUMN. A native apple of largeish dimensions, raised by John Kenrick, Esq. of Newton, Mass.; colour pale green in the shade, but bright red next the sun, and streaked with deeper red; the flesh white, stained more or less with red; tender, juicy and rich, with an agreeable sub-acid flavour; ripe in October.

KILHAM HILL. This apple, one of the most saleable varieties in Salem markets, originated on the farm of Dr. Kilham, in Wenham, Essex County, Mass.; the size is above medium; form a little oblong; the skin yellow; striped with red; the flesh is yellow and high flavoured; from September to November.

ORANGE SWEETING, *Yellow Sweeting.* This variety is much cultivated near Hartford, in Connecticut, for the Boston, Providence and Philadelphia markets; the fruit is rather large, flattened at its base and summit; the colour yellow, or orange; flesh very sweet and excellent; from September to December.

RED INGESTRIC. A first-rate dessert apple, of medium size, and bright yellow colour, deeply tinged with red; raised by Mr. Knight, President

article of export and commerce to Nice, Barcelona, Cadix, and Marseilles. The fruit is rather large, its form inclining to globular. Its beautiful waxy skin is a little marbled with a very faint green near the eye; its colour in the shade is a pale yellow, tinged with flaming crimson next the sun; the flesh is white, tender, delicate, sweet, with the fragrant perfume of roses. It ripens in September, and will keep till Spring.

MONSTROUS PIPPIN, *New-York Gloria Mundi*. Fruit of enormous size, often weighing twenty-five ounces or more; of a pale lemon colour; flesh tender, and of a sprightly flavour, excellent for cooking; ripens in October, and continues fit for use till January.

NEWTOWN PIPPIN, *American Newtown Pippin*, *Yellow Newtown Pippin*. This variety, when perfectly matured, is considered by some as the finest apple in our country; its skin is green, changing to an olive yellow at maturity, having a thin russet covering the greatest part of the base; flesh pale yellow and firm; juice saccharine, and possessing a rich and highly aromatic flavour; from December to April.

NEWTOWN SPITZENBURG, *Matchless*. A beautiful apple of medium size; skin streaked, and tinged with red and yellow; flesh yellow, rich and highly flavoured; from October till February.

NORFOLK BEAUFIN. Fruit middling size, flattish, of a deep red and pale green colour; it ripens in November, and is frequently to be obtained in England in July following; the flesh is firm and savoury; the tree hardy, upright, a good bearer; fruit excellent for use in the kitchen, and highly esteemed for the dessert.

ORTLEY PIPPIN, *Ortley Apple*. A fruit very much resembling the Yellow Newtown Pippin, but a little more oval; skin bright yellow in the shade, and bright scarlet with russet spots next the sun; flesh yellowish, crisp and breaking; very juicy, with the same pine apple flavour which distinguishes the Newtown Pippin; good from November to April.

PENNOCK'S RED WINTER. Fruit very large and compressed; of deep red colour, streaked with yellow; flesh tender, juicy, and of sweet and pleasant flavour; ripens in November, and will keep good till March. It is a very popular apple in the Philadelphia markets.

PINE APPLE RUSSET, *Hardingham's Russet*. This delicious apple is above the middle size, roundish, ovate; skin pale greenish yellow, with white specks, and partially russet; juice abundant; flesh of a spicy, aromatic, pine-apple flavour, hence its name; ripe in September.

RHODE ISLAND GREENING. Fruit large and depressed at maturity; greenish yellow; slightly acid, and of the finest flavour; ripens in November, and continues till April. A most estimable apple for cooking as well as for the dessert.

RIBSTONE PIPPIN, *Formosa Pippin*, *Traver's Apple*, *Glory of York*. Fruit of medium size, roundish, and partially depressed; of a pale yellow colour, tinged with red; pulp slightly acid, and of fine flavour; ripens in November, and continues till April. It is one of the most popular dessert apples in England.

ROXBURY Russet. This variety is cultivated extensively in Massachusetts for the Boston markets, and for exportation. The fruit is of medium size; of a fine yellow russet colour, mixed with dull red; flesh white, juicy, rich, sub-acid and excellent; for use in Winter, and will keep till June.

SWAAR APPLE. A much celebrated Winter table fruit in some parts of New York and New Jersey; it is a large green apple of uncommon flavour and richness; highly deserving cultivation in every collection of fine fruit; good till March.

VANDEVERE. An apple of medium size, the form flat; skin pale red, with rough yellowish blotches; flesh yellow and tender; juice plentiful, rich and sprightly; from October to January.

WHITE WINTER CALVILLE, *Calville Blanche d'Hiver, Bonnet carré.* This fruit is large; its colour at maturity bright yellow, tinged with red; its form rather flat; flesh white, tender, and pleasant; from November to March. Tree an abundant bearer.

WINE APPLE, *Hay's Winter, Large Winter Red.* A variety highly esteemed in the Philadelphia markets; the fruit is large; of bright red colour, striped with yellow, the stalk end russety; its flesh is rich, aromatic, and pleasant; from October to February. The tree bears young and abundantly.

WINTER SWEETING, *Grafton Sweeting, Seaver Sweeting.* This apple is large; its skin smooth, of a bright yellow colour, tinged with blush; its flesh yellow, juicy, sweet, and fine flavoured; from November until March.

CIDER FRUIT.

CAMPFIELD, OR NEWARK SWEETING. This apple is next in reputation, as a cider fruit, to the Harrison, and is often mixed with that apple in equal proportions when ground; it is of the middle size, skin smooth, of red and yellow colour; the flesh is white, firm, sweet, and rich.

GRANNIWINKLE. Fruit of moderate size, rather oblong; the skin a dark red, somewhat rough; flesh yellow, sweet and rich. It is commonly mixed with the Harrison for making cider of a superior quality; ripe in November.

HEWE'S VIRGINIA CRAB. From this fruit is obtained the celebrated Crab Cider; it is of small size, nearly round; skin of a dull red, streaked with greenish yellow; the flesh is fibrous and astringent; juice acid and austere.

HARRISON. This fruit is much celebrated in New Jersey as a cider apple; it is somewhat ovate, below the middle size; the skin is yellow, with black spots; flesh yellow, firm, rich and sprightly. Ten bushels will make a barrel of exquisite cider, from which may be taken fourteen quarts of distilled spirits.

APRICOT.

ABRICOTIER. *Prunus Armeniaca.*

THE fruit of the Apricot is next in esteem to the Peach, and as it ripens three or four weeks earlier, should be more generally cultivated. The flowers appear in April, on the shoots of the preceding year, and on spurs of two or more years' growth, and the fruit ripens in July and August. The London Horticultural Society's catalogue describes fifty-four sorts, and Messrs. Prince have forty-four in their catalogue; besides these, is the Peach Apricot, a large fruit, supposed to be a hybrid between a Peach and an Apricot.

Our enterprising fellow-citizen, Mr. Wm. Shaw, has succeeded for many years in maturing large quantities of this excellent fruit on standards; but they ripen best when trained against close fences. In England some of the varieties are cultivated as standards and espaliers; they seldom bear much fruit under ten or twelve years; and then the fruit is abundant and of the finest flavour. They are commonly cultivated as wall trees, in an East or West aspect; for if they are planted to face the South, the great heat causes them to be mealy before they are eatable. New varieties are procured from seed, as in the Peach, and approved sorts are perpetuated by budding on plum stocks, &c.

The varieties of the Apricot, in general, bear chiefly upon the young shoots of last year, and casually upon small spurs rising on the two or three years old fruit branches. The Moor Park bears chiefly on the last year's shoots, and on close spurs formed on the two year old wood. The bearing shoots emit the blossom buds immediately from the eyes along the sides, and the buds have a round and swelling appearance.

Apricot trees may be planted at any time after the head is formed: some head them down in the nursery bed, and remove them to their destined places when five or six years old.

Standards will require only occasional pruning to regulate such branches as may be too numerous, too extended or

cross formed, and to remove any casually unfruitful parts and dead wood ; but the regular branches, forming the head of the tree, should not be shortened unless necessary.

The general culture of the wall Apricots comprehends a Summer and Winter course of regulation, by pruning and training. The fan method is generally adopted, but some prefer training horizontally. With young trees some contrive to fill the wall by heading down twice a year.

The Winter, or early Spring management, comprehends a general regulation both of the last year's shoots and the older branches. A general supply of the most regularly situated young shoots must be every where retained, for successional bearers the ensuing year. Cut out such branches as are not furnished with competent supplies of young wood, or with fruit spurs, to make room for training a general supply of the most promising branches retained. Generally observe in this pruning to retain one leading shoot at the end of each branch ; either a naturally placed terminal, or one formed by cutting (where a vacancy is to be furnished) into a proper leader. Let the shoots retained for bearers be moderately shortened : reduce strong shoots in the least proportioned—cutting off one-fourth or less of their length ; from weak shoots take away a third, and sometimes a half. This shortening will conduce to the production of a competency of lateral shoots the ensuing Summer, from the lower and middle placed eyes ; whereas without it, the new shoots would proceed mostly from the top, and leave the underpart of the principal branches naked, and the lower and middle parts of the tree unfurnished with proper supplies of bearing wood. Never prune below all the blossom buds, except to provide wood, in which case cut nearer to the origin of the branch. As, in these trees, small fruit spurs, an inch or two long, often appear on some of the two or three years' branches furnished with blossom buds, these spurs should generally be retained for bearing. As each tree is pruned, nail it, laying in the branches and shoots from three to six inches distance, straight or close to the fence or wall.

The Summer pruning is principally to regulate the young

shoots of the same year. In the first place, take off close all the irregular foremost shoots, taking care to retain a competent supply of choice side shoots, with a good leader to each parent branch. Continue these mostly at full length all the Summer, regularly trained in, to procure a sufficiency to choose from in the general Winter pruning, for new bearers the next year.

If the Summer regulation commences early, while the shoots are quite young, and, as it were, herbaceous, those improper to retain may be detached with the finger and thumb; but when of firmer growth, they must be removed with the knife. If any very strong shoots rise in any part where the wood is deficient, they may be topped in June, which will cause them to produce several laterals the same year, eligible for training in, to supply the vacancy.

Sometimes the fruit is much too numerous, if not attacked by insects, often growing in clusters; in which case thin them while in a young green state, leaving the most prominent fruit singly, at three or four inches distance, or from about two to six on the respective shoots, according to their strength. The Apricots so thinned off, and the first principal green fruit, are very fine for tarts.

SELECT DESCRIPTIVE LIST OF APRICOTS.

BREDA, *Abricot de Hollande, Amande Aveline, Royal Persian*. Fruit medium size, of a round form; and deep yellow colour; the pulp is soft and juicy; the tree a great bearer, and the fruit which ripens early in August, is in great esteem.

BRUSSELS. Highly esteemed for its productiveness; fruit medium size, inclining to an oval form; of a yellow colour, and next the sun covered with numerous dark spots; the flesh is of a greenish yellow colour, of a brisk flavour; and not liable to become mealy; ripens in August.

EARLY ORANGE, *Royal George, Royal Orange*. The fruit of a medium size; of a deep yellow colour, spotted with red or dark purple next the sun; flesh deep orange, succulent and well flavoured; not perfectly a free stone; ripens early in August.

HEMSKIRKE. Fruit middle sized, roundish, slightly compressed; of a bright yellow colour; flesh tender, juicy, with a particularly rich, delicate flavour, resembling that of the Green Gage Plum; ripe in July.

MOORPARK, *Hanson's, Temple's, Dunmore's Breda*. The tree is of vigorous growth, and extraordinarily productive; the fruit is very large; of a bright gold colour, or orange, with dark spots next the sun; flesh orange colour, melting and excellent; ripens early in September.

MUSCH. A fine new variety from Persia; in shape round; of a deep yellow colour, and remarkable for the transparency of its pulp, through which the stone is visible; the flesh is very fine and agreeable; ripens in July.

PEACH APRICOT, *Abricot Pêche, Abricot de Nancy, Imperial Ansons*. This is a first-rate fruit; form variable, generally flattened; skin slightly downy; fawn colour next the sun, tinged with reddish spots or points; pulp yellow, melting, juice abundant, high flavoured and excellent; ripens early in August.

PURPLE, *Alexandrian Abricot, Abricot Angoumois, Abricot Violet, Black Apricot*. A small, globular, downy fruit, a little oblong; of a pale red colour, becoming deep red or purple next the sun; flesh pale red, but orange next the stone; a little acid, but good; ripens in August.

RED MASCULINE, *Abricot Precoce, Abricot Hatif Musque, Early Masculine*. This is an old and very early variety; the fruit of which is small, of a roundish form, and greenish red colour; the pulp is tender; the tree a good bearer, and the fruit esteemed for its earliness and tart taste; ripens in July.

ROYAL, *Abricot Royale*. This fruit is next in size to the Moorpark; rather oval, compressed; of dull yellow colour, slightly red; flesh pale orange, firm, juicy, sweet, and high flavoured, with a slight acid; ripens early in August.

TURKEY, *Large Turkey*. A superior Apricot; fruit of a medium size; deep yellow colour, with red blotches next the sun; form globular; flesh firm, juicy, rich and excellent; ripe in July and August.

ALMOND.

AMANDIER. *Amygdalus*.

ALTHOUGH Almonds are not much cultivated in this part of our country, they are entitled to notice. The species are fruit trees, or ornamental trees and shrubs, both much esteemed for the gay colour and early appearance of their flowers; these vary in their colour from the fine blush of the Apple blossom to a snowy whiteness. The chief obvious distinction is in the fruit, which is flatter, with a coriaceous covering, instead of the rich pulp of the Peach

and Nectarine, opening spontaneously when the kernel is ripe. It is a native of Barbary, China, and most Eastern countries. There are twenty-one sorts described in the catalogue of the Linnæan Botanic Garden at Flushing; some of which are represented as new kinds from France and Italy, where they are cultivated extensively for their fruit.

In France, they have above a dozen species or varieties, besides a hybrid, called the Almond Peach. The common and bitter Almond are only to be distinguished by the taste of the kernels of their fruit, which is the only part used. The tender-shelled is in the greatest esteem, and next, the sweet and jordan. The bitter cuticle, or skin of Almonds, is taken off by immersion in boiling water.

The sweet Almond and other varieties are used as a desert in a green or imperfectly ripe, and also in a ripe or dried state. They are much used in cookery, confectionary, perfumery, and medicine.

The Almond is propagated by seed, for varieties, or for stocks; and by budding on its own, or on Plum stocks, for continuing varieties. The Almond tree bears chiefly on the young wood of the previous year, and in part upon small spurs or minor branches; it is therefore pruned like the Apricot and Peach, and its culture in other respects is the same.

CHERRY.

CERISIER. *Prunus cerasus*.

THE Cherry, of the cultivated varieties, is said to have been first introduced into Italy in the year 73, from a town in Pontus, in Asia, called Cerasus, whence its specific name; and it was introduced into Britain one hundred and twenty years afterwards.

The Romans had eight varieties of Cherries, red, black, tender-fleshed, hard-fleshed, small bitter flavoured, and heart-shaped. There are now upwards of two hundred in

cultivation. The French divide their Cherries into griottes, or tender-fleshed; bigareau, or heart-shaped, and guignes, or small fruit. The fruit of many varieties is somewhat heart-shaped, whence they are called ox-heart, white-heart, black-heart, &c.; why some sorts are called dukes, is not so obvious. The morello cherry is very different from the other varieties, bearing almost exclusively from the preceding year's wood, and the pulp of the fruit having the consistence and flavour of the fungi called morel; whence the name. The Chinese Cherry is valuable on account of its bearing an excellent fruit, and ripening it in forcing-houses.

Cherries are grafted, or budded on seedlings from Cherry stones, and from seedlings of the red and black mazzard. For dwarfing they are worked on the morelle, or perfumed Cherry; the latter is preferred in Holland. In this country, the budding system is more frequently practised on stone fruit in general, than grafting.

Cherry trees, in general, produce the fruit upon small spurs or studs, from half an inch to two inches in length, which proceed from the sides and ends of the two year, three year and older branches, and as new spurs continue shooting from the extreme parts, it is a maxim in pruning both standards and espaliers, not to shorten the bearing branches when there is room for their regular extension.

The morello is in some degree an exception, as it bears principally on the shoots of the preceding year, the fruit proceeding immediately from the eyes of shoots; and bears but casually, and in a small degree, on close spurs formed on the two year old wood, and scarcely ever on wood of the third year; therefore, in pruning, leave a supply of young shoots on all the branches from the origin to the extremity of the tree, for next year's bearers.

All kinds of Cherry trees, except the morello, are apt to grow very tall; to remedy this, and to enable them to form handsome heads, the leading shoot should be cut off, when about three years' growth from the bud; after which give only occasional pruning, to reform or remove any casual irregularity from cross-placed or very crowded branches, and take away all canker and decayed wood.

Dwarf Cherry trees may be introduced into the Kitchen Garden, and trained as espaliers, &c. When morellos are planted in an orchard, they may be placed from fifteen to twenty feet apart; trees of the duke kind may be planted from twenty-five to thirty feet apart; and the heart-shaped in general, will require to be from thirty to forty feet from each other, or from any other spreading trees.

Cherry trees may be removed the first year after the bud is established; but they will bear removing at any time before they come into bearing, which is about the fifth year.

The gum which exudes from Cherry trees is equal to gum arabic; and Hasselquist relates, "that more than one hundred men, during a siege, were kept alive for nearly two months, without any other sustenance than a little of this gum taken sometimes into the mouth, and suffered gradually to dissolve." The wood is hard and tough, and used by the turner and cabinet maker.

SELECT. DESCRIPTIVE LIST OF CHERRIES.

DUKE AND ROUND FRUIT.

AMBREE, *Cerise Ambree*. A large cherry with a round head, flattened at the opposite end; marbled with red and yellow in the shade, bright red next the sun; flesh pale yellow, somewhat transparent, very juicy, sweet, and excellent; ripe in June and July.

ARCH DUKE, *Griotte de Portugal, Portugal Duke*. A large globular red cherry; like the May Duke, it grows in clusters, but the tree grows more vigorous than that variety; an excellent Cherry, and a great bearer; ripe in July.

BELLE DE CHOISY, *Cerise de la Palembree, Cerise Doucette*. A middle-sized, roundish fruit, growing in pairs on a forked stalk; skin transparent, red, mottled with amber; flesh amber-coloured, tender and sweet; ripe in June and July.

BELLE ET MAGNIFIQUE. A fine cherry, much esteemed in Massachusetts. The tree is said to be vigorous and productive; the fruit truly magnificent; its colour red, mottled with white spots; valuable from its late maturity in July.

DOWNER'S FAVOURITE. A large round cherry, raised by S. Downer, Esq. of Dorchester, Mass.; colour light red; flesh firm and of a fine

sprightly flavour; ripening after most other superior varieties are gone, on which account this variety is highly prized in the markets.

HOLMAN'S DUKE. The branches of this tree are more spreading than the May Duke; the fruit is larger, of equally fine flavour, and ripens about two or three weeks later, on which account it is highly esteemed.

KENTISH, Flemish. A middle-sized fruit, roundish, flattened at both ends; skindy red, marbled; flesh succulent, with a somewhat astringent but saccharine juice; makes a delicious sweetmeat; and will keep a year by laying the fruit on hair sieves exposed to the sun in July.

LATE DUKE, June Duke, Cerise, Anglaise, Tardive. A cherry of large size; flesh very rich; it ripens in July, and lasts long on the tree, improving in its flavour. The tree is of vigorous growth, and an abundant bearer.

MAY DUKE. An early globular red cherry, of medium size; it ripens in June the flesh is of a soft and an agreeable acid; the tree a good bearer, and the fruit excellent.

MORELLO, Milan, Cerise du Nord, English Morello. The fruit is so named from its juice being similar to that of the *Morus*, or Mulberry. It is a delicious, medium-sized, round cherry; nearly black when at maturity; tree a great bearer; the fruit will keep late, and is excellent for preserving and for brandy.

PLUMSTONE MORELLO. A tree of moderate size, of the Duke or Kentish species; a very large, dark, round cherry, nearly black; of a rich acid flavour. The stone is very large, and resembles that of a plum; a native of Virginia, introduced by Wm. Prince, Esq. of the Linnæan Botanic Garden, Flushing.

WATERLOO. A large, round, dark cherry, inclining to black at maturity; the flesh is firm and of an excellent flavour; raised by a daughter of Mr. Knight, and so named from its perfecting its fruit soon after the battle of Waterloo. The tree is of strong but irregular growth, and ripens its fruit in July.

HEART-SHAPED OR BIGARREAU.

BIGARREAU, Grafton, Turkey Bigarreau, Yellow Spanish. Very large, obtuse, heart-shaped; yellowish amber colour, but fine red next the sun; flesh firm, white, sweet, and well flavoured; a beautiful and excellent fruit; ripe in June and July.

BLACK EAGLE. A beautiful variety raised by Miss Knight of Downton Castle, 1806: fruit of globular form, and middle size; skin dark purple or nearly black; flesh very tender, rich, and of excellent flavour. The tree grows strong, very upright, and ripens its fruit early.

BLACK HEART, Guignier a Fruit noir. Fruit rather large, heart-shaped; dark purple, approaching to black at maturity; flesh dark red, tender, of excellent flavour; ripe early in July; tree a good bearer.

BLACK TARTARIAN, Black Circassian, Fraser's Black Tartarian, Black Russian, Ronald's Large Black Heart, Fraser's Black Heart.

A very large heart-shaped fruit, of a most superior quality; colour dark shining purple, or black; flesh firm, dark red or purple; sweet, and of most excellent flavour; in June and July. The tree grows rapid, and is very productive.

DOWNTON. A new variety raised by Mr. Knight. Fruit rather round, inclining to heart-shape; of a pale yellow colour, sprinkled with minute red spots, and large patches of dull red or maeoon; flesh pale amber colour, tender and juicy, very sweet and high flavoured; ripens in June and July.

ELTON. This excellent variety was raised by Mr. Knight in 1806; the tree is very vigorous and productive; the fruit is pretty large, heart-shaped; pale glossy yellow in the shade, but marbled with bright red next the sun; flesh firm, sweet and rich; ripens soon after the May Duke.

FLORENCE. A very fine heart-shaped cherry; of a yellow amber colour, marbled with bright red in the shade, bright red next the sun; tolerably firm, juicy, rich and sweet; ripe end of June and in July.

GIRDLEY, Apple Cherry. A native fruit of medium size, which originated on the farm of Mr. Girdley, of Roxbury, near Boston; the colour is black, the flesh firm, of a fine flavour; in July; the tree grows vigorous, and is very productive.

GAZCOIGN'S BLEEDING HEART. A large sized heart-shaped cherry, having the appearance of a small drop or tear at the end; skin of a dark red colour; flesh firm, but mellow; juice plentiful and of excellent flavour; early in July.

HARRISON'S HEART, Red Ox Heart. A large heart-shaped cherry; yellowish or umber colour, but light red next the sun; flesh tender and high flavoured; in June and July.

KNIGHT'S EARLY BLACK. The blossoms of this variety appear very early; its fruit resembles the Waterloo; of a rich dark hue; its flesh is firm, juicy, and abundantly sweet; by the middle of June.

MAZZARD. This cherry grows wild, and is cultivated also in abundance in various parts of England. It is the principal fruit employed for the making of Cherry Brandy, and the stocks of the species are best adapted for nursery-men to bud and graft the better kinds on.

NAPOLÉON BIGARREAU, Bigarreau Napoleon, Lauermann, Gros Bigarreau de Lauermann. The tree of this variety is remarkable for the vigour and beauty of its growth; it produces a fine large white fruit with red spots; the flesh is remarkably white, solid, and of a sweet agreeable flavour; early in July.

REMINGTON WHITE HEART. A moderate sized cherry, of pleasant flavour; chiefly valuable for its very late maturity, being towards the end of August. It is said to have originated in Rhode Island.

WHITE TARTARIAN, White Transparent Crimea, Fraser's White. A beautiful cherry, pale yellow, approaching to an amber next the sun; a much admired fruit, of excellent flavour; a good bearer, ripening early in July.

CHESTNUT.

CHATAIGNER. *Castanea*.

THE Chestnut is well known as a large tree, spreading its branches finely where it has room, but planted closely, will shoot up straight to a great height. It is supposed to have been originally from Sardis. It is so common as to be considered a native of France and Italy, and some consider it as naturalized in England; it is also indigenous in America. The London catalogue contains the names of thirty-two sorts under cultivation. The Chestnut is like the Walnut, both a timber and fruit tree; some of the oldest trees in the world are of this species.* The American Chestnut differs so little from the European, that no specific distinction can be drawn. It is one of the largest trees of the forest, the wood being extremely durable, and in high esteem for posts and rails to construct fences; and the nuts are very delicious. The *Castanea pumila*, or Chinquapin nut, is a small tree, or rather shrub, growing to the height of thirty feet in the Southern States, but seldom exceeding ten in cold latitudes; the fruit is very sweet and agreeable to eat.

There is a variety with striped leaves, which is very ornamental. The most esteemed of the French kinds are called Marron. Some excellent fruit-bearing varieties are cultivated in England, France, Italy and Spain, as also in other parts of Europe; these are increased by grafting or budding in the usual methods, but the plants for coppice wood, or timber, are best raised from nuts. Some varieties ripen their fruit a few days earlier than others, but none of these have been fixed on, or perpetuated by nurserymen, so as to render them available by purchasers. The fruit is a desirable nut for Autumn and Winter, and is eaten roasted,

* At Fortworth, in Gloucestershire, England, is a large tree, fifty-two feet round; which in 1150 was called the "great Chestnut of Fortworth." Marsham states that this tree is 1100 years old, and that the timber is almost incorruptible, and more durable than oak. Its durability is commensurate with the long life of the tree.

with salt, and sometimes raw ; and in some countries it is not only boiled and roasted, but ground into meal ; and puddings, cakes, and bread, are made from it.

CRANBERRY.

CANNEBERGE. *Oxycoccus*.

THIS genus of plants is well distinguished from the *Vaccinium*, or Whortleberry, by the narrow revolute segments of corolla ; and are pretty little trailing evergreen plants, to which a peat soil, and rather moist situations, are absolutely necessary. They are very little changed by culture.

The *Oxycoccus macrocarpus* is a red acid fruit, highly valued as a sweetmeat, or for tarts. It is well known that this excellent fruit grows in many parts of our country spontaneously ; and that the mere gathering it, is all that bountiful Nature requires at our hands ; but it is well worth cultivating where there are none. This fruit will keep a whole year, if properly preserved in close covered stone jars, and is considered, by many, as superior to the best currant jelly, and may be kept for many months in a raw state without injury.

The *Oxycoccus palustris* bears edible berries, which are gathered wild both in England and Scotland, and made into tarts. Lightfoot says, that twenty or thirty pounds worth are sold each market day, for five or six weeks together in the town of Langtown, on the borders of Cumberland.

Nicol says, the American species is more easily cultivated than the English, but is inferior to it in flavour. There is reason to believe that the quality of the fruit of each of these species is subject to variations, which have not yet been practically distinguished. Their cultivation is now so well understood, that they may be both considered with propriety as inmates of the fruit garden.

It is customary in England to prepare beds on the edges of ponds, which are banked up so as to admit of the wet getting underneath them; bog or peat earth is considered essential for the roots to run in, but it has been discovered that they can be cultivated in damp situations of a garden, with a top dressing of peat or bog earth, and if they are once suited as to the soil, the plants will multiply so as to cover the bed in the course of a year or two, by means of their long runners, which take root at different points. From a very small space a very large quantity of Cranberries may be gathered; and they prove a remarkably regular crop, scarcely affected by the state of the weather, and not subject to the attacks of insects. Sir Joseph Banks gives an account in (*Hort. Trans.* 1, 71,) of his success in cultivating this fruit. "In one year, viz., 1813, from 326 square feet, or a bed about eighteen feet square, three and a half Winchester bushels of berries were produced, which, at five bottles to the gallon, gives one hundred and forty bottles, each sufficient for one cranberry pie, from two and a half square feet."

CURRANT.

GROSEILLER A GRAPPES. *Ribes*.

This is a genus of well known shrubs, much cultivated for their fruit. It is a native of the Northern parts of Europe, and found in hedges and woods in England; and there are some species indigenous in America. The fruit, being of an agreeable sub-acid taste, is generally relished, both as a dessert, and in pies and tarts; it is also much used in making wine, and is grown to a considerable extent for that purpose in Essex, Kent, and about Pershore, in Worcestershire, England. There are ten species cultivated in the garden of the Horticultural Society of London, comprising twelve varieties of red, ten of white, five kinds of black, together with champagne, mountain, rock, upright, Pennsylvanian, &c. Any number of varieties of the red and

white may be procured from sowing the seeds, but they are generally propagated by cuttings of the last year's wood, which should be of sufficient length to form handsome plants, with a clear stem, ten inches high; these may be planted immediately upon losing their leaves in Autumn, or very early the ensuing Spring.

The Currant will grow in almost every soil, but prospers best in one loamy and rich. The best flavoured fruit is produced from plants in an open situation, but they will grow under the shades of walls or trees, and either as low bushes, or trained as espaliers. They bear chiefly on spurs, and on young wood, of from one to three years' growth, and therefore, in pruning, most of the young wood should be cut to within two or three buds of that where it originated. After the plants are furnished with full heads, they produce many superfluous and irregular shoots every Summer, crowding the general bearers, so as to require regulating, and curtailng, both in the young growth of the year, and in older wood.

The principal part of the work may be done in Winter, or early in the Spring; but a preparatory part should be performed in Summer, to eradicate suckers, and thin the superfluous shoots of the year, where they are so crowded as to exclude the sun and air from the fruit. In training espaliers and for standards, two branches are laid in a horizontal direction along the bottom of the trellis, perhaps half a foot from the surface of the earth, and the growth from these of all upright shoots, which will admit of being arranged at the distance of five or six inches of each other, is encouraged. Fan standards are sometimes trained with the branches radiating from the crown of the stem.

The black Currant, or *Ribes nigrum*, is common in moist woods in Russia and Siberia; its culture is similar to that of the red, but as it is less apt to bear on spurs than on young wood, the shoots should not be so much shortened in this as in the other,

Currant bushes will require to be planted at different distances, according to the situation and mode of training, &c. When planted in beds, borders, or squares, they

should be six feet apart, but if trained as espaliers, they will require to be eight feet apart.

Many people dislike the flavour of black Currants, they are, therefore, not much used in the kitchen or dessert, and seldom in wine making. They make a jelly or jam, in estimation as a gargle for inflammatory sore throats. "In Russia and Siberia, wine is made of the berries alone, or fermented with honey, and with or without spirits. In Siberia they make a drink of the leaves; these tincture common spirits so as to resemble brandy, and a few of them dried and mixed with black tea, answer all the purposes of the green material."—(*Loudon.*)

All kinds of Currants may be forced by placing them in any forcing department in January or February; they will produce ripe fruit in April and May.

FIG.

FIGUIER. *Ficus carica.*

THERE are many species of the Fig, which are all natives of warm climates. In some parts of Asia, and in the South of Europe, they are always grown as standards; and the fruit, green and dried, forms an important part of the food of the inhabitants. The London Horticultural catalogue contains the names of seventy-five sorts; and Messrs. Prince, of Flushing, have upwards of forty in their collection, some of which are select sorts from France and Italy. It is cultivated in England as a fruit tree, and, in warm situations, will ripen its fruit in the open air. In Sussex, on the sea-coast, it ripens its fruit on standards. Some of the best in England, are at Arundel Castle; and there is a Fig orchard of one hundred trees at Tarring, near Worthing. Those at Arundel are planted six or eight feet apart, and from a single stem allowed to continue branching conical heads, pruning chiefly irregular and redundant growths, and cutting out decayed or injured wood.

The Fig tree may be propagated from seed, cuttings, layers, suckers, roots, and by grafting; the most generally approved method is by layers or cuttings, which come into bearing the second, and sometimes the first year. No tree is more robust or more prolific; even plants in pots or tubs kept in a temperature adapted for the Orange tree, will fruit freely, and ripen two crops a year, and by being taken care of through the Winter, will go on growing and ripening fruit without intermission. Mr. Knight has obtained from his hot-house in England, eight successive crops in a year, by bending the limbs in a position below the horizontal. The trees will produce tolerable crops in the second year if rung or decorticated; and by this process maturity of the fruit is accelerated, and its size increased. Its maturity is also hastened by pricking the fruit with a straw or quill dipped in olive oil, or even by slightly touching the fruit with oil, at the finger's end. In Fig countries the fruit is preserved by dipping it in scalding lye, made of the ashes of the fig tree and then dried in the Sun.

When Figs are cultivated in a garden, a good loamy soil should be provided; and they may be trained to close fences, or trellises, in sheltered situations. At the approach of Winter they must be protected; those trained to close fences may be secured through the Winter, by a covering of matting; and such as may be in open situations should be liberated from the trellis, and laid down close to the ground, and covered three or four inches with earth; or trenches may be formed of that depth, sufficient to contain the branches, which should be fastened down with hooked pegs, without cramping them: such of the strong central branches as will not bend, may be enveloped in litter. They should be pruned before they are laid down in November, and on being raised again in April, they may be trained as before. Figs may be cultivated in private gardens as easily as the vine.

FILBERT AND HAZLENUT.

NOISETIER AVELINIER. *Corylus.*

THE Filbert, in many varieties, and also the common Hazlenut, grow spontaneously in the woods of Britain, and some few varieties are indigenous in this country. The kinds of Filberts generally cultivated, are the white, red, cob, clustered, and frizzled; of each of which there are many varieties. As this shrub is so easily cultivated, it is a matter of astonishment that the nuts from this genus of plants are so scarce in our markets. In different parts of England there are Filbert orchards. In the Filbert grounds about Maidstone, in Kent, it is a prevailing practice to cultivate Hops, standard Apples, and Cherries, among the Filberts; when these come into a bearing state, the Hops are taken up and transplanted elsewhere, and the fruit trees only suffered to remain. The spare-ground is then planted with Gooseberries, Currants, &c. The red Filbert is allowed to have a finer flavour than the white. The Cob-nut is large, with a thick shell, but the kernel is sweet and of considerable size. The Barcelona is a good large nut, with a thin shell. The Crossford is very sweet, kernels well, and the tree is a great bearer.

All the different kinds may be grown as dwarf standards; or they will bear very well if planted in clumps; but as they produce an abundance of suckers, these should be parted off frequently, and planted in a nursery bed for stocks; as the bearing plants will cease to produce fruit in any quantity, if the suckers are allowed to form a thick bush. They may be propagated by seed, by suckers, by layers, or by grafting in the Spring upon seedling or sucker stocks.

The Filbert bears principally upon the sides of the upper young branches, and from small shoots which proceed from the bases of side branches cut off the preceding year. The leading shoot is every year to be shortened, and every shoot that is left to produce fruit should be clipped: which prevents the tree from being exhausted in making wood at

the end of the branch — Such branches as may have borne fruit, must be cut out every year, in order to promote the growth of a supply of young fruit-bearing branches.

GOOSEBERRY.

GROSEILLER. *Ribes grossularia, uva, crispa, etc.*

THE Gooseberry is a native of several parts of Europe, and is indigenous in America, as far North as 68°. It is cultivated to greater perfection in England than in any other part of the world. In Spain and Italy, this fruit is scarcely known. In France it is neglected. In Lancashire, England, and some parts of the adjoining counties, almost every cottager cultivates the Gooseberry, with a view to prizes given at what are called Gooseberry Prize Meetings; of these, there is annually published an account with the names and weight of the successful sorts, in what is called the Manchester Gooseberry Book. The prizes vary from ten shillings to five and ten pounds sterling. There are meetings held in the Spring to "make up," as the term is, the sorts, the persons, and the conditions of exhibition; and in August, to weigh and test the fruit, and determine the prizes.

In Lindley's Guide to the Orchard and Fruit Garden, 722 varieties are described; from which the following are selected, as in most repute for size, flavour, and other good qualities:

REDS.

BRITISH CROWN. This variety is noted as being a fine flavoured fruit, especially for tarts. 33 prizes had been awarded for it in 1829; the largest berry weighing 18 pennyweights and 10 grains.

CHAMPAGNE. The fruit of this variety is held in great esteem for its delicious flavour; the berry is of medium size, somewhat oblong and hairy.

CAPPER'S TOP SAWYER. This is a late fruit, of oblong shape, and hairy near the base. 171 prizes were obtained for this in 1828 and 9; the heaviest berry weighing 22 dwts. 17 grains.

CROWN BOB, MELLING'S. This variety won 85 prizes in two seasons; the largest berry weighing 21 dwts. 12 grains. It is a late fruit, of oblong shape, bright red colour, and hairy.

HUNTSMAN. This variety, which originated with Mr. Bratherton, took 216 prizes in 1828 and 9; the heaviest berry weighing 24 dwts.

LANCASHIRE LAD, HARTSHORN'S. 156 prizes were awarded for this variety in two years; the heaviest berry weighing 22 dwts. 11 grains.

MARQUIS OF STAFFORD, KNIGHT'S. This much esteemed late variety, is hairy, of medium size, bright red colour, and delicious flavour.

PRINCE REGENT, BOARDMAN'S. This variety won 141 prizes in two seasons; the heaviest berry weighing 22 dwts. 11 grains.

ROARING LION, FARMER'S. In 1828, 349 prizes were awarded for this variety; and in 1829 it won 453 prizes; the largest berry weighing 29 dwts.; since which time, berries have been known to weigh over one ounce and a half each.

SIR JOHN COTGRAVE, BRATHERTON'S. This variety took 343 prizes in two seasons; the heaviest berry weighing 25 dwts. 2 grains.

YELLOWS.

BUNKER'S HILL, CAPPER'S. 210 prizes were awarded for this variety in two years; the heaviest berry weighing 20 dwts. 2 grains.

BRITANNIA. This variety is noted for its earliness and delicious flavour. The fruit is of medium size, weighing about 18 dwts.

COTTAGE GIRL, HEAPS'S. This variety won 133 prizes in two seasons; the largest berry weighing 19 dwts. 14 grains.

GUNNER, HARDCASTLE'S. 192 prizes were given for this variety in 1828; and in 1829, 181 prizes were awarded; the heaviest berry weighing 24 dwts. 5 grains; fruit rather late.

ROCKWOOD, PROPHET'S. The fruit of this variety is very early; it is of a roundish oblong shape, and slightly hairy. It won 303 prizes in two years; the largest berry weighing 21 dwts. 3 grains.

SOVEREIGN, BRATHERTON'S. 202 prizes were obtained for this variety in two seasons; the heaviest berry weighing 22 dwts. 17 grains.

VIPER, GORDON'S. This is an early smooth fruit, and won 87 prizes in two years; the largest berry weighing 18 dwts. 5 grains.

GREENS.

ANGLER, COLLIER'S. 365 prizes were awarded for this variety in two seasons; the heaviest berry weighing 20 dwts. 1 grain.

EARLY GREEN, HAIRY. This variety is described in the Pomological Magazine as a very early fruit; it is round, hairy, of deep green colour and excellent flavour, but not large.

FAVOURITE, BATES'S. 235 prizes were given for this variety in two years; the heaviest berry weighing 18 dwts. 20 grains.

GREENWOOD, BERRY'S. This variety obtained 204 prizes in two seasons; the largest berry weighing 17 dwts. 4 grains. It is a deliciously flavoured fruit

INDEPENDENT, BIGG'S. 121 prizes were given for this variety in two years; the largest berry weighing 16 dwts. 4 grains. It is an early rich fruit.

OCEAN, WAINMAN'S. This variety won 278 prizes in two seasons; the heaviest berry weighing 18 dwts. 8 grains. The fruit is oblong and smooth.

TROUBLER, MOORE'S. 160 prizes were taken for this variety in two years; the largest berry weighing 17 dwts. 13 grains.

WHITES.

BONNY LASS, CAPPER'S. This variety won 167 prizes in two seasons; the heaviest berry weighing 21 dwts. 10 grains.

CHESHIRE LASS, SAUNDERS'S. This is one of the earliest varieties, and makes excellent tarts. The fruit is large, oblong, downy, and fine flavoured.

GOVERNESS, BRATHERTON'S. 124 prizes were awarded for this variety in two years; the largest berry weighing 24 dwts.

LADY DELAMERE, WYLD'S. This variety took 253 prizes in two seasons; the heaviest berry weighing 22 dwts. 6 grains.

NAILER, BLOMILEY'S. 134 prizes were given for this variety in two seasons; the largest berry weighing 18 dwts. 12 grains.

QUEEN CAROLINE. This variety won 142 prizes in two years; the heaviest berry weighing 18 dwts. 1 grain. It is a richly flavoured fruit.

WELLINGTON'S GLORY. 173 prizes were obtained in two seasons for this variety; the largest berry weighing 20 dwts. 4 grains.

WHITE EAGLE. This variety gained 476 prizes in two seasons; the heaviest berry weighing 23 dwts. 12 grains.

WHITE LION, CHELWORTH'S. 102 prizes were given for this variety in two years; the largest berry weighing 18 dwts. 22 grains. The fruit is late, slightly hairy, and excellent for tarts.

WHITESMITH, WOODWARD'S. This is a small early berry, weighing about 14 dwts. The skin is downy, and the fruit is fully equal to any gooseberry of its colour.

The Gooseberry may be propagated by all the modes applicable to trees or shrubs, but that by cuttings is usually adopted for continuing varieties, and that by seed for procuring them. The cuttings should be taken from promising shoots just before the leaves begin to fall in the Autumn; the greatest part of the buds should be taken off, leaving

only two or three buds on the top. Cut them at such a length as the strength and ripeness of the wood will bear; and plant them in good pulverized soil. On the approach of Winter, lay some moss or litter around them; and, by being well cultivated, they will be fit to transplant when they are a year old.

When bushes are procured from the public nurseries, let the general supply be in such kinds as will ripen in succession. They may be planted in the kitchen garden, in single rows, along the side of the walks or paths, or in compartments by themselves, in rows from six to eight feet apart from row to row, and five or six feet apart in the rows; or in small gardens, they may be trained to a single tall stem, and tied to a stake: this though six or eight feet high, occasions scarcely any shade, and it does not occupy much room, nor exclude air, while, at the same time, the stem becomes closely hung with berries, and makes a pleasant appearance in that state. Persons of taste may train them on arched trellises, which, if judiciously managed, the ground around them may be more easily cultivated; the fruit may be kept from being splashed with rain, and may be easily gathered when wanted, or preserved by shading with mats, &c. Those who may have a choice of soil and site, should fix on a good, rich loamy earth, and plant some of the choice kinds in a Northern and Eastern aspect, near the fence, to come late in succession.

The Gooseberry produces its fruit not only on the shoots of the preceding year, and on shoots two or three years old, but also on spurs or snags arising from the older branches along the sides; but the former afford the largest fruit. The shoots retained for bearers should therefore be left at full length, or nearly so; the first pruning should be done before the buds swell, so as not to endanger their being rubbed off in the operation. Cut out all the superfluous cross shoots, and prune long ramblers and low stragglers to some well placed lateral or eye: retain a sufficiency of the young well situated lateral and terminals, to form successional bearers. In cutting out superfluous and decayed wood, be careful to retain a leading shoot at the end of a principal

branch. The superfluous young laterals on the good main branches, instead of being taken off clean, may be cut into little stubs of one or two eyes, which will send out fruit buds and spurs.

Some persons not pruning the Gooseberry bush on right principles, cause it to shoot crowdedly full of young wood in Summer, from which the fruit is always small, and does not ripen freely with full flavour; on which account it is an important point in pruning, to keep the middle of the head open and clear, and to let the occasional shortening of the shoots be sparing and moderate. Between the bearing branches keep a regulated distance of at least six inches at the extremities, which will render them fertile bearers of good fruit.

The prize cultivators of this fruit in Lancashire, are particular in preparing a very rich soil, and they water occasionally with liquor which drains from dunghills; and there are some, who, not content with watering at the root and over the top, place a small saucer of water under each Gooseberry, only six or eight of which are left on a bush; this is technically called suckling.—There are others that ring some of the branches; this is done by cutting out small circles of bark round them, and by pinching off a great part of the young wood, the strength is thrown to the fruit.

Unripe Gooseberries may be preserved in bottles against Winter: some after filling the bottles in a dry state, stand them in a slow oven, or in hot water, so as to heat them gradually through without cracking them; they will keep a whole year, if closely corked, and sealed as soon as cold.

The Gooseberry may be forced in pots or boxes, placed in pits, or in the peach house or vinery. "Hay, plants in pots in November, removes to the peach-house in January, and has ripe fruit in the end of April, which he sends to table growing on the plants."—(*Hort. Trans.* 4. 415.)

GRAPE.

VIGNE. *Vitis, vinifera, vulpina.*

THE Grape Vine is described by Loudon, as a trailing deciduous hardy shrub, with a twisted irregular stem, and long flexible branches, decumbent, like those of the bramble, or supporting themselves when near other trees, by means of tendrils, like the pea. The leaves are large, lobed, entire, or serrated and downy, or smooth, green in Summer, but when mature, those of varieties in which the predominating colour is red, constantly change to, or are tinged with some shade of that colour; and those of white, green, or yellow grapes, as constantly change to a yellow, and are never in the least tinged either with purple, red, or scarlet. The breadth of the leaves varies from five to seven or ten inches, and the length of the foot stalks from four to eight inches. The flowers are produced on the shoots of the same year, which shoots generally proceed from those of the year preceding: they are in the form of a raceme, of a greenish white colour, and fragrant odour, appearing in the open air in June; and the fruit, which is of the berry kind, attains such maturity as the season and situation admit, by the middle or end of September. The berry, or grape, is generally globular, but often ovate, oval, oblong, or finger-shaped; the colours green, red, yellow, amber, and black, or a variegation of two or more of these colours. The skin is smooth, the pulp and juice of a dulcet, poignant, elevated, generous flavour. Every berry ought to enclose five small heart, or pear-shaped stones; though, as some generally fail, they have seldom more than three, and some varieties, as they attain a certain age, as the Ascalon, or sultana raisin, none. The weight of a berry depends not only on its size, but on the thickness of its skin and texture of the flesh, the lightest being the thin-skinned and juicy sorts, as the sweet water or muscadine; and what are considered as large-berried of these varieties, will weigh from five to seven penny-weights, and measure from one to two-thirds of an inch in girth. A good sized bunch of the

same sorts may weigh from two to six pounds ; but bunches have been grown of the Syrian grape, in Syria, weighing forty pounds, and in England weighing from ten to nineteen pounds. A single Vine in a large pot, or grown as a dwarf standard, in the manner practised in the vineyards in the North of France, ordinarily produces from three to nine bunches : but by superior management in gardens in England, the number of bunches is prodigiously increased, and one plant, that of the red Hamburgh sort, in the vinery of the royal gardens at Hampton Court, has produced two thousand two hundred bunches, averaging one pound each, or in all nearly a ton. That at Valentine, in Essex, has produced two thousand bunches of nearly the same average weight.

The age to which the Vine will attain in warm climates is so great as not to be known. It is supposed to be equal or even to surpass that of the Oak. Pliny speaks of a Vine which had existed six hundred years ; and Bose says, there are Vines in Burgundy upwards of four hundred years of age.

In Italy there are vineyards which have been in a flourishing state for upwards of three centuries, and Miller tells us that a vineyard a hundred years old is reckoned young. The extent of the branches of the Vine, in certain situations and circumstances, is commensurate with its produce and age. In the hedges of Italy, and woods of America, they are found overtopping the highest Elm and Poplar trees ; and in England one plant trained against a row of houses in Northallerton (lately dead) covered a space in 1585, of one hundred and thirty seven square yards ; it was then above one hundred years old. That at Hampton Court, nearly of the same age, occupies above one hundred and sixteen square yards ; and that at Valentine, in Essex, above one hundred and forty-seven square yards. The size to which the trunk, or stem, sometimes attains in warm climates, is so great, as to have afforded planks fifteen inches broad, furniture, and statues ; and the Northallerton Vine, above mentioned in 1785, measured four feet in circumference near the ground, and one branch

of the Hampton Court Vine measures one hundred and fourteen feet in length. Vine timber is of great durability.

The varieties of the Grape in countries where it is grown for the wine press, are as numerous as the vineyards; for as these for the most part differ in soil, aspect, elevation, or otherwise, and as the Vine is greatly the child of local circumstances, its habits soon become adapted to those in which it is placed. When it is considered that a vineyard once planted will last two or three centuries, it will readily be conceived that the nature of a variety may be totally changed during only a part of that time. The varieties mostly in esteem for wine making, are small berries, and bunches with an austere taste. The Burgundy, as modified by different soils and situations, may be considered the most general vineyard Grape of France, from Champagne or Marne, to Marseilles or Bordeaux.

The best wine in Italy and Spain is also made from Grapes of this description; but in both countries many of the larger berried sorts are grown on account of their producing more liquor. The sweet wines, as the Malmsey, Maderia, Constantia, Tokay, &c. are made from sweet-berried grapes allowed to remain on the plants till over ripe. That wine is the strongest, and has most flavour, in which both the skins and stones are bruised and fermented. The same thing is the case in making cider; but in both processes bruising the stones or kernels is often neglected. The vine was formerly extensively cultivated in Britain for the wine press, but its culture is now confined to the garden as a dessert fruit; and they have in that country not only the best varieties, but they grow the fruit to a larger size, and of a higher flavour, than is done any where else in the world: this is owing to the perfection of their artificial climates, and the great attention paid to soil and sub-soil, and other points of culture. The fruit is produced in some vineries during every month in the year; and in the London markets (generally)

it is to be had in the highest degree of perfection from March to January.

The Vine will thrive in any soil that has a dry bottom ; and in such as are rich and deep it will grow luxuriantly, and produce abundance of large fruit ; in shallow, dry, chalky, or gravelly soils, it will produce less fruit, but of better flavour. Speechly recommends dung reduced to a black mould, the dust and dirt of roads, the offal of animals, or butcher's manure, horn shavings, old rags, shavings of leather, bone dust, dung of deer and sheep, human excrement when duly meliorated by time, a Winter's frost, and repeatedly turning over. Abercrombie says, that dung out of a cow-house, perfectly rotted, is a fine manure for the Vine ; he recommends drainings from dunghills to be used over the ground once in ten or fourteen days from the time the buds rise, till the fruit is set, and that fresh horse dung be spread over the ground in Autumn as a manure, and also to protect the roots from the inclemency of the weather ; some, however, disapprove of manuring high, as being calculated to produce wood rather than fruit.

The general mode of propagating the Vine is by cuttings, either a foot or more long, with a portion of two year old wood, or short, with only one bud, or one bud and a half joint, &c. Vines are to be had at the nurseries, propagated either from layers, cuttings, or eyes ; but plants raised from cuttings are generally preferred ; many are of opinion that it is a matter of indifference from which class the choice is made, provided the plants are well rooted, and in good health, and the wood ripe. A mode of very general utility is to select the plants in the nursery a year before wanted, and to order them to be potted in very large pots. Varieties without end are raised from seed, and it is thought that by propagating from the seeds of successive generations, some sorts may ultimately be procured, better adapted for ripening their fruit in the open air than now known. A seedling Vine, carefully treated, will show blossoms in its fourth or fifth year ; say that it produces a fair specimen of its fruit in the sixth year, then a new generation may be obtained.

so often ; but seeds ought never to be sown, except for experiment.

William Robert Prince, Esq. in his Treatise on the Vine, published 1830, enumerates about five hundred and fifty varieties in cultivation, in the vineyard attached to the Linnæan Botanic Garden at Flushing, including about ninety American native Grapes ; but no sufficient evidence has as yet been exhibited of vineyards flourishing here equal to what they do in Europe. Mr. Loubat has attempted to establish a vineyard on Long Island, which he abandoned after six years' arduous exertion. The following have been found to succeed best in the vicinity of New-York: the Sweetwater, the Chasselas, the Muscadine, the White Tokay, the Black Hamburgh, the Blue Cortiga, the Miller Burgundy, the Austrian Muscadel, the Messlier, the Morillon, the Black Prince, Blanc, and some excellent seedling sorts from the imported Lisbon Grapes. To plant a vinery for a full crop of good Grapes of various flavours, take a white and red Muscat, a white and red, or black Muscadine, a white and red Frontignac, a black or red Muscadel, a white Raisin Grape, a white and red Hamburgh, a Stilwell's, and red Sweetwaters, a white and red Nice, a black Damascus, a red Syracuse, and a black Constantia. The above list contains some of the most esteemed table Grapes of all colours and flavours, which will ripen in succession. The most preferable kinds of our native Grapes, for private gardens, are the 'Catawba,' the York, (Pa.), 'Black Madeira,' the Schuylkill, Muscadel, and the Isabella. To these may be added the Scuppernong, or Hickman Grape, which is said to be larger than the Fox Grape, of a delightful perfume, and when ripe, it is of a yellowish white colour.

Previous to planting Vines, care should be taken that the ground be well pulverized and prepared for some distance around for the roots to spread. The soil should be deep and dry, and some rich compost, or vegetable mould, should be used around the roots in filling in ; a handful or two of wet ashes to each plant is recommended by Mr. Loubat as

beneficial; and he recommends the planting to be done in the month of March, or early in April.

There are various methods adopted in training and pruning the Vine; and it appears impossible to lay down rules to suit every cultivator. The Vine having, like other trees, a tendency to produce its most vigorous shoots at the extremities of the branches, and particularly so at those which are situated highest, it generally happens, when it is trained high, that the greater portion of the fruit is borne near the top; and it has been observed, that the fruit produced on the vigorous shoots, which naturally grow at the extremities of the long branches, is generally more abundant, and of finer quality, than that produced on the short lateral ones, from which circumstance, high training seems to be the best calculated for private gardens.

In some parts of Italy, Vines are cultivated together with Mulberry trees, and are allowed to mingle and hang in festoons; thus silk and wine are produced on the same spot; and it is considered that when Vines are allowed to grow over trees, on the side of a house, or on bowers, or extended on tall poles, without much trimming, they will produce more fruit, and are not so liable to mildew.

Dr. G. W. Chapman of New-York, having paid some attention to the cultivation of native Grapes, observes, that the Vine, in its natural state, seldom or ever throws out bearing shoots until it reaches the top of the tree on which it ascends, when the branches take a horizontal or descending position. From this fact, he considers horizontal training preferable to that in the fan shape. From the experiments he has made, he has found that the shoots coming from those parts of the branches bent downwards, are more productive than from those ascending; he considers deep digging around the Vine, even to the destruction of some of the extending roots, as calculated to promote the growth of more fruit and less wood, than if allowed to spread near the surface: and he disapproves stopping the shoots before the fruit until early in July.

Mr. William Wilson of Clermont, leaves his Vines their whole length at the time of trimming in October. In

November, they are laid on the ground at full length, fastened down with pins, and covered lightly with earth; in this state they lie all the Winter. In April, as soon as the weather will permit, they are uncovered, and left lying on the ground ten or twelve days: by the first of May, the Vines are trained to stakes or poles of the length of ten feet and upwards; and by the middle of June, the stakes are entirely covered by new shoots of the Vine, and with plenty of fruit, which ripens in September. Mr. W. says, that until he pursued his present course, his fruit was frequently blasted and mildewed, but that he has now Vines twenty or thirty feet long, which run up the fruit trees adjoining; others, being carried up eight or ten feet, are stretched horizontally. It is seldom he gathers fruit within three or four feet of the ground, and he has never any blasted or infected with mildew; he keeps the ground cultivated by frequent hoeing and raking; but he says he has used no manure for ten years, or more.

Edward H. Bonsall, Esq., has a vineyard of American Grapes at Germantown, Pa., in a high state of cultivation. In page 331 of Prince's Treatise on the Vine, is a letter to the author, containing some valuable information, from which the following is extracted as appropriate to our subject.

Mr. Bonsall's vineyard is situated between the Schuylkill and Delaware Rivers, four miles from the former, and eight from the latter, at an elevation of 300 feet above their level, has an aspect facing S. S. E., with a substratum of light isinglass soil, and seems well suited to the purpose. He says, "from my experience, both on my premises, and at other places, it is my opinion that we should reject almost all the foreign varieties, especially where our object in cultivating them is to make wine." He has upwards of thirty varieties of American Vines under cultivation; he recommends preparing the ground by ploughing with two ploughs with strong teams, one immediately behind the other, in the same furrow, each of them set deep; and after the ploughing is completed, to be harrowed thoroughly. Then in the direction the rows are intended to be planted, parallel

furrows are run across the field, at the distance of eight feet from each other; these are afterwards crossed at right angles, five feet asunder. In the opening, at the intersection of these furrows, cuttings from nine to twelve inches long are planted, and arranged with a view to the Vines being, when grown, at distances of four by seven feet from each other; to this end, he frequently plants two cuttings in a place, some of which are used to fill up with, in case of failures. He says, that in 1829 he planted in nursery beds from two to three thousand cuttings as late as the middle of April to the middle of May, with better success than at any previous time. "In this case the slips should be kept in a cool damp place, where vegetation may be held in check. To insure their freshness, sprinkle them occasionally with water. Previous to planting, cut them a proper length, and place them with their lower ends three or four inches in water, in a tub above ground, where they may soak three or four days. At this season the temperature will be likely to be such as to spur vegetation at once into healthy and vigorous action. The Autumn, or early in the Spring, is preferable for rooted plants. In the Autumn of the first year, after the frost has killed the unripe part of the young shoots, they should be pruned down to the mature firm wood, and then with a hoe hilled over with the surrounding soil, which will completely protect them through the Winter. If left without protection the first Winter, many of them will perish."

Mr. Bonsall says, his mode of training, as far as he is aware of it, is entirely peculiar to himself, which he describes as follows: "I take chestnut posts, the thickness of large fence rails, seven feet in length; these I plant along the rows, at distances of ten feet from each other, and at such a depth as to leave five feet above the surface of the earth; then taking three nails to each post, and driving them to within half an inch of their heads, the first two and a half feet from the ground, a second midway between that and the top, and the third near the top, I attach No 11 iron wire (one degree soft is best) firmly to one of the nails in the end post, pass on to the next, and stretching it straight and

tight, give it one turn round a nail in the same line as the one to which it was first attached. Having in this manner extended it along the three courses, the whole length of the row, my trellis is formed. I have had a portion of my vineyard fitted up in this way for three years, and experience has confirmed the superior fitness of the plan. It is not its least recommendation, that it possesses in a degree the character of labour-saving machinery. A very important and extensive labour-making portion of the operations in the vineyard during the Summer, is the attention required by the growing shoots to keep them properly trained up. They grow and extend themselves so rapidly, that where the strips of the trellis are lath, or where poles are used to support vines, unless very closely watched, they fall down in every direction, in a very unsightly and injurious manner. Here the wire being small, the tendrils or claspers eagerly and firmly attach themselves to it, and thus work for themselves, in probably two-thirds of the instances where the attention of the vigneron would otherwise be required. There is a free access afforded to the Sun and air, and no hold for the wind to strain the frame," &c. Mr. Bonsall says further, "I shall not enter into a minute description of my manner of pruning, but may just say, that after the vines have attained a full capacity for production, (say five years from the cutting,) my view is to prepare them for bearing an average of fifty clusters to each, leaving several shoots of from three to five joints on a vine for this purpose. When fresh pruned, they will not be more than four feet high, at their greatest age."

Although the man of taste and capacity for improving on the improvements of others, may have gleaned ideas from the above extracts, sufficient to enable him to cultivate the vine in his own garden, it may be necessary to direct the reader's attention to the different methods of cultivating this excellent fruit in varied situations.

A Vine may be trained horizontally under the coping of a close fence or wall, to a great distance, and the borders in an East, South-East, and Southern aspect of large gardens, may be furnished with a variety of sorts, which will

ripen in great perfection, without encumbering the borders; or the plants may be trained low, like currant bushes, in which case, three or more shoots, eighteen inches or two feet in length, may diverge from the stem near the ground, to supply young wood annually for bearing. The Summer pruning consists in removing shoots which have no fruit, or are not required for the succeeding season; in topping fruit-bearing shoots, and also those for succeeding years, when inconveniently long and straggling. For as by this mode, the shoots destined to bear, are all cut in—to three or four eyes at the Winter pruning, no inconvenience arises from their throwing out laterals near the extremities, which stopping will generally cause them to do.

In training Vines as standards, the single stem at the bottom is not allowed to exceed six or eight inches in height, and from this two or three shoots are trained, or tied to a single stake of three or four feet in length. These shoots bear each two or three bunches, within a foot or eighteen inches of the ground, and they are annually succeeded by others which spring from their base, that is, from the crown or top of the dwarf main stem. This is the mode practised in the North of France and in Germany; in the South of France and Italy, the base or main stem is often higher, and furnished with side shoots, in order to afford a great supply of bearing wood, which is tied to one or more poles of greater height. The Summer pruning in this case, is nearly the same as in the last. In the Winter pruning, the wood that has borne is cut out, and the new wood shortened, in cold situations, to three or four eyes, and in warmer places to six or eight eyes.

Abercrombie's methods of pruning established Vines, admit of much diversity, as the plants are in different situations. Without reckoning the cutting down of young or weak plants alternately to the lowermost Summer shoots, which is but a temporary course, three different systems of pruning have their advocates. In the first method, one perpendicular leader is trained from the stem, at the side of which, to the right and left, the ramifications spring. When the plant is established, the immediate bearers, or shoots of

the growing season, and the mother bearers, or shoots of the last year's growth, are thus managed. Soon after the growing season has commenced, such rising shoots as either are in fruit and fit to be retained, or are eligibly placed for mother bearers next season, are laid in, either horizontally, or with a slight diagonal rise, at something less than a foot distance, measuring from one bearing shoot to the next; the rising shoots, intended to form young wood, should be taken as near the origin of the branch as a good one offers, to allow of cutting away, beyond the adopted lateral, a greater quantity of the branch, as it becomes old wood; the new Spring laterals, not wanted for one of these two objects, are pinched off. The treatment of those retained during the rest of the Summer, thus differs: As the shoots in bearing extend in growth, they are kept stopped, about two eyes beyond the fruit; the connate shoots, cultivated merely to enlarge the provision of wood, are divested of embryo branches, if they show any, and trained at full length as they advance during the Summer, until they reach the allotted bounds; were they stopped in the middle of their growth, it would cause them to throw out troublesome laterals; in the Winter pruning, there will thus be a great choice of mother bearers. That nearest the origin of the former mother bearer, or most commodiously placed, is retained, and the other or others on the same branch are cut away; the rest of the branch is also taken off, so that the old wood may terminate with the adopted lateral; the adopted shoot is then shortened to two, three, four, or a greater number of eyes, according to its place on the Vine, its own strength, or the strength of the Vine. The lower shoots are pruned in—the shortest, in order to promote a growth of young wood, at the bottom of the Vine."

The second method is to head down the natural leader, so as to cause it to throw out two, three, or more principal shoots; these are trained as leading branches; and in the Winter pruning are not reduced, unless to shape them to the limits of the trellis, or unless the plant appears too weak to sustain them at length. Laterals from these are cultivated about twelve inches apart, as mother bearers;

those in fruit are stopped in Summer, and after the fall of the leaf, are cut in—to one or two eyes. From the appearance of the mother bearers, thus shortened, this has been called spur-bearing.

The third method seems to flow from taking the second plan as a foundation, in having more than one aspiring leader, and from joining the superstructure of the first system immediately to this, and in reserving well-placed shoots to come in as bearing wood. Thus, supposing a stem which has been headed, to send up four vigorous competing leaders, two are suffered to bear fruit, and two are divested of such buds as break into clusters, and trained to the length of ten, twelve, or fifteen feet, or more, for mother bearers next season. In the Winter pruning, the leaders which have borne a crop, are cut down to within two eyes of the stool, or less, according to the strength of the plant, while the reserved shoots lose no more of their tops than is necessary to adjust them to the trellis."

Nicol observes, that "most of the Summer pruning of Vines may be performed with the fingers, without a knife, the shoots to be displaced being easily rubbed off, and those to be shortened, being little, are readily pinched asunder." After selecting the shoots to be trained for the production of a crop next season, and others necessary for filling the trellis from the bottom, which shoots should be generally laid in at the distance of a foot or fifteen inches from each other, rub off all the others that have no clusters, and shorten those that have, at one joint above the uppermost cluster. For this purpose, go over the plants every three or four days till all the shoots in fruit have shown their clusters, at the same time rubbing off any water shoots that may rise from the wood.

Train in the shoots to be retained, as they advance. If there be an under trellis, on which to train the Summer shoots, they may, when six or eight feet in length, or when the Grapes are swelling, be let down to it, that the fruit may enjoy the full air and light, as it advances towards maturity. Such of these shoots as issue from the bottom, and are to be shortened in the Winter pruning to a few eyes, merely for

the production of wood to fill the trellis, may be stopped when they have grown to the length of four or five feet, Others that are intended to be cut down to about two yards, and which issue at different heights, may be stopped when they have run three yards, or ten feet, less or more, according to their strength. And those intended to be cut at or near to the top of the trellis, should be trained a yard or two down the back, or a trellis may be placed so as to form an arbour; or they may be placed to run right or left a few feet on the uppermost wire.

The stubs or shoots on which the clusters are placed, will probably push again after being stopped, if the plants be vigorous. If so, stop them again and again; but after the fruit are half grown, they will seldom spring. Observe to divest the shoots, in training, of all laterals as they appear, except the uppermost on each, in order to provide against accidents, as hinted at before, in training the newly planted Vines. When these shoots are stopped, as directed above, they will push again. Allow the lateral that pushes, to run a few joints, and then shorten it back to one, and so on as it pushes, until it stops entirely. When the proper shoots get ripened nearly to the top, the whole may be cut back to the originally shortened part, or to one joint above it, if there be reason to fear that the uppermost bud of the proper shoot will start.

Divest the plants of all damped and decayed leaves as they appear, as such will sometimes occur in continued hazy weather, and be particularly cautious not to injure the leaf that accompanies the bunch, for if that is lost, the fruit will be of little value.

"Every one of penetration and discernment," Nicol observes, "will admit the utility of thinning the berries on bunches of grapes, in order that they may have room to swell fully; and further that of supporting the shoulders of such clusters of the large growing kinds as hang loosely, and require to be suspended to the trellis or branches, in order to prevent the bad effects of damp or mouldiness in very moist seasons. Of these, the Hamburgh, Lombardy, Royal Muscadine, Raisin, St. Peter's, Syrian, Tokay, and

others, should have their shoulders suspended to the trellis, or to the branches, by strands of fresh matting, when the berries are about the size of garden peas. At the same time, the clusters should be regularly thinned out with narrow pointed scissors, to the extent of from a fourth to a third part of the berries. The other close-growing kinds, as the Frontignacs, Muscats, &c., should likewise be moderately thinned, observing to thin out the small seedless berries only of the Muscadine, Sweet Water, and flame-coloured Tokay. In this manner, handsome bunches and full-swelled berries may be obtained; but more so, if the clusters or over-burdened plants be also moderately thinned away. Indeed, cutting off the clusters, to a certain extent, of plants overloaded, and pushing weak wood, are the only means by which to cause them to produce shoots fit to bear fruit next year; and this should be duly attended to, so long as the future welfare of the plants is a matter of importance.

The preceding observations may be considered as falling short of what may be expected on the cultivation of so important a fruit as the Grape; but it is introduced into this book only as a garden fruit. The modes of training in vineyards and vineries, are alike suited to the garden. Low training may be practised in borders or hedge rows, in large gardens; and high training in sheltered situations, on high trellises or arbours. By proper management, the Vine may be elevated to the middle story of a house by a single stem, and afterwards trained to a great height, according to the taste of the proprietor. As the Vine is often trained near buildings, an awning may be conveniently formed over the tops so as to admit of fumigating the Vine with smoke from tobacco, &c., as may be necessary in the Summer season; or a sort of movable tent may be made of light boards, and cheap glazed linen, or an old sail, &c., capable of covering the Vine while a smoke is created underneath; this will effectually destroy such insects as may annoy the Vine, and may prevent mildew and other diseases.

MULBERRY.

MURIER. *Morus.*

THERE are several species of the *Morus* or Mulberry. The white kind is commonly cultivated for its leaves to feed silkworms, though in some parts of Spain, and in Persia, they are said to prefer the Black Mulberry. In China, it appears that both sorts are grown for the same purpose. The most esteemed variety of the white is one grown in Italy, and especially in Lombardy, with vigorous shoots, and much larger leaves than the other. The *Morus multicaulis* is cultivated in many parts of France, and is by some preferred to all other varieties. It is said that a less quantity of foliage from this variety will satisfy the silkworms. The late Andrew Parmentier, Esq., was the means of introducing several choice varieties from that country; and our nurserymen generally, have, of late years, turned their attention to the cultivation of such as are best adapted for silkworms, which are sold at moderate prices.

In France, the white Mulberry is grown as pollard Elms are in England. In Lombardy, it is grown in low marshy ground. In China, it is also grown in moist loamy soil, and both there and in the East Indies, as low bushes, and the plantations rooted up and renewed every three or four years. In many parts, when the leaves are wanted for the worms, they are stripped off the young shoots, which are left naked on the tree; in other places, the shoots are cut off, which is not so injurious to the tree, while the points of the shoots, as well as the leaves, are eaten by the worms.

The plants are sometimes raised from seed, and one ounce of seed will produce 5000 trees, if sown in rich loamy soil, the latter end of April, or early in May; but the young plants will require protection the first Winter; they are more commonly propagated by layers and cuttings, put down in the Spring. The Italian variety is frequently grafted on seedling stocks of the common sort, in order to preserve it from degenerating. In the East Indies, the plants

are raised from cuttings, three or four of which are placed together, where they are finally to remain.

But Mulberry trees are valuable for their fruit; and in England the black and red kinds are in great esteem, and much cultivated. The fruit of the white Mulberry is white, and less acid than that of the black species. The black is naturally a stronger tree than the other; the fruit is of a dark blackish red, and of an agreeable aromatic and acid flavour. The red Mulberry has black shoots, rougher leaves than the black Mulberry, and a dark reddish fruit, longer than the common sort, and of a very pleasant taste. The fruit of the yellow Mulberry is very sweet and wholesome, but not much eaten, excepting by birds; the timber, however, is valuable, from its abounding in a slightly glutinous milk of a sulphureous colour, and is known in Europe under the name of fustic wood, for dying a yellow colour.

In Russia, the fruit of the *Morus tartarica* is eaten fresh, conserved, or dried; a wine and a spirit are also made from them, but the berries are said to be of an insipid taste.

All species of the *Morus* are remarkable for putting out their leaves late, so that when they appear, gardeners may safely set out their greenhouse plants, taking it for granted that all danger from frost is over; from this circumstance, plantations of Mulberry trees may be made in this country in the Spring of the year with greater safety.

The Mulberry produces its fruit chiefly on little shoots of the same year, which arise on last year's wood and on spurs from the two year old wood; in both stages, mostly at the ends of the shoots and the branches. In pruning, thin out irregular crossing branches, but never shorten the young wood, on which the fruit is produced. If any of the dwarfish kinds are cultivated as espaliers for their fruits, cut so as to bring in a partial succession of new wood every year, and a complete succession once in two years, taking the old barren wood out, as may be necessary. As the blossom buds cannot be readily distinguished from others in the Winter, the best period for pruning is when the blossoms first become visible in the Spring.

There is another genus of plants, known as the Paper

Mulberry, which is very ornamental, called *Broussonetia papyrifera*; though a low tree, it has vigorous shoots, furnished with two large leaves; the fruit, which is small, is surrounded with long purple hairs, changing to a black purple colour when ripe, and full of juice. "In China and Japan, it is cultivated for the sake of the young shoots, from the bark of which the inhabitants of the Eastern countries make paper. The bark being separated from the wood, is steeped in water, the former making the whitest and best paper. The bark is next slowly boiled, then washed, and afterwards put upon a wooden table, and beat into a pulp. This pulp being put in water, separates like grains of meal. An infusion of rice, and the root of manhiot are next added to it. From the liquor so prepared, the sheets of paper are poured out one by one, and when pressed, the operation is finished."

"The juice of this tree is sufficiently tenacious to be used in China as a glue, in gilding either leather or paper. The finest and whitest cloth worn by the principal people at Otaheite, and in the Sandwich Islands, is made of the bark of this tree. The cloth of the Bread Fruit tree is inferior in whiteness and softness, and worn chiefly by the common people."

NECTARINE.

PECHERÀ FRUIT LISSE, OU BROGNONS. *Amygdalus nectarina*.

THE varieties of this fruit resemble the Peach in every respect, except that the skin is perfectly smooth, of a waxen appearance, and the flesh generally more firm; although of the same genus as the Peach, which is so plentiful in this country, the fruit of the Nectarine is quite a rarity, and seldom appears in our markets. There are seventy-two varieties cultivated in the Horticultural Garden of London; and Nicol says, that "no varieties of the Nectarine are at present known to have originated in North America, except "the Boston."

It is generally allowed that their failure is occasioned by the attacks of insects. The most efficacious method that I have heard of, for securing any thing like a crop of Nectarines, is to fumigate the trees in the evening, when the air is calm and serene, at the season when this fruit is ready to set, see pages 244 to 250. Tobacco is the most effectual antidote for these insects; but a friend of mine collected a quantity of salt hay that had been used for his spinach the preceding Winter; with this he created a smoke, first on one side of his plantation, and afterwards on the other, by which means he obtained a good supply of fruit. Our enterprising horticulturist, Mr. W. Shaw, has succeeded in gathering fine fruit, by pursuing the English plan, namely, in training his trees against a close fence; and it has been discovered by others, that the Nectarine, like the Grape Vine, will yield best in sheltered situations. That eminent horticulturist, Mr. David Thomas, observes, that "a vast quantity of fruit is annually destroyed by the *Curculio* which causes the Plum, Apricot and Nectarine, prematurely to drop from the tree. To prevent this loss, let the tree after the blossoms fall, be frequently shaken by a cord connected with a swinging door, or with a working pump-handle, &c.; or let the bugs be jarred from the tree and killed. Or keep geese enough in the fruit garden to devour all the damaged fruit as it falls. We know that this last method is infallible."

As some may object to shaking or jarring fruit trees, for fear of disturbing the fruit, such are here reminded, that if the blossoms set more fruit than can be supported, it will not come to full perfection, and the trees may be injured in their future bearing; for these reasons, when fruit sets too thick, it should be thinned in an early stage of its growth.

The Nectarine, as also the Peach tree, are subject to injury by an insect different to the *Curculio* species, which feeds on sap beneath the bark, principally near the surface of the earth; but if not checked, will commit ravages on the trunk and root, so as eventually to destroy the tree. The egg is supposed to be first deposited in the upper part of the tree; and in the months of June and July, it becomes a very small

maggot, which drops to the ground, and approaches the tree near the surface. If the ground be kept clear around the roots, as it ought always to be, the worm can readily be detected by a small speck of gum, which appears on the tree after it has made its entrance, which gumminess will increase in quantity as it progresses ; but if the trees are thoroughly examined about once a week or ten days, and the gum wherever found, removed by means of a small knife or pointed wire, the worm may be at once defeated from making any havock on the trees. An orchard of several acres may be kept free from worms by going over it a few times.—After a shower of rain is a good time, as the gum can then be more easily discovered, and when it is removed, the wound will soon heal up, and the danger is over, provided the ground be kept cultivated around the trees ; and the collar or that part from which emanate the main roots be near the surface.

* * * * *

This is an important precaution, and should be attended to at the time of transplanting all descriptions of trees and smaller plants ; because *deep planting* prevents the essential circulation of the juices of plants in their regular and natural courses, and consequently causes disease and premature death ; and it must be admitted, that from the circumstance of this fruit being generally raised on standard trees, and in a light soil our cultivators are apt to plant too deep ; and thus act contrary to sound judgement and philosophy, with a view to save the trouble and expense of staking or otherwise supporting their newly planted trees, which precaution is absolutely necessary to their preservation, even in less tempestuous climates, and in stiff as well as in light soil.

Saltpetre dissolved in the proportion of one pound to five gallons of water, and applied around the stems and roots of trees, as recommended for plants in general, page 12 of the general remarks, is, in my opinion, one of the best remedies for the destruction of various kinds of insects ; it is moreover allowed by modern and learned physiologists to contain the most essential nutriment to all descriptions of trees or smaller

plants, when judiciously used. Other remedies are recommended to be applied for the destruction of these insects around fruit trees, besides those previously mentioned ; as dissolved potash, coal tar, sulphur and lime-mortar mixed, vinegar, soap suds, &c. Culture, upon correct principles, will, however, in general operate not only as a radical cure, but as a preventive to all defects in trees and plants ; which to be healthy and productive, should be so managed that the sap and nutrimental juices can circulate through every pore which Nature has designed for their perpetuity. (See article on the choice of Fruit Trees in the Nursery, page 259, also article Peach.)

The Nectarine is generally budded on stocks of the same species, or on Peach or Plum, two or three years old. Knight recommends growing Almond stocks for the finer kinds of Nectarines and Apricots, as likely to prevent the mildew, and as being allied to the Peach. Dubreuil recommends a Plum stock for clayey soils, and the Almond for such as are light, chalky, or sandy. The same opinion is held by the Montreal gardeners. The Flemish nurserymen graft both the Peach and Nectarine on the Myrabella Plum, a very small cherry-shaped fruit.

The budding may be performed in July or August, in the side of the stock, which will, if properly managed, shoot the following Spring, and attain the length of three or four feet the first year. After the budded trees have ripened their first year's shoots, they may either be planted where they are to remain, or retained in the nursery for two, three, or four years, till in a bearing state. Whether the plants be removed into the orchard at a year old, or remain in the nursery, the first shoots from the bud must be headed down in a judicious manner, in order to promote the most desirable form. In annual pruning, thin out superfluous branches and dry wood, and shorten the bearing shoots.

Nectarines may be trained to a close fence, or wall, in private gardens ; in which case, such plants should be chosen as are budded low. (See article Apricot.)

SELECT DESCRIPTIVE LIST OF NECTARINES.

FREESTONE NECTARINES.

AROMATIC. A middle sized, rather globular fruit, deep red or brown next the sun; flesh pale straw, but red at the stone; juice of a rich vinous flavour; ripe early in August.

EARLY VIOLET, *Violette Hative, Petite Violette Hative, Lord Selsey's Elruge, Large Scarlet.* Fruit variable in size, generally medium; pale yellowish green, but darkish purple red next the sun; flesh melting, juicy, rich and excellent; ripe in August.

FAIRCHILD'S EARLY. Fruit very early, but small; of globular shape, yellow in the shade, deep scarlet next the sun; flesh yellow, not juicy, but well flavoured; ripe in July and August.

LEWIS'S SEEDLING. A fine native variety, raised by Mr. Lewis of Boston; fruit of medium size; heart-shaped; colour bright yellow, mottled with red; flesh yellow, firm, pleasant and peculiar in flavour; ripe in September.

MILLER'S ELRUGE: One of the very best and most high flavoured nectarines; fruit medium size, of a dark red and pale yellow colour; pulp melting, very juicy, rich and high flavoured; ripens early in August.

PITMASTON'S ORANGE. A good sized globular, or heart-shaped fruit, of a rich yellow colour, but dark crimson or purple next the sun; flesh golden yellow, but red next the stone, from which it separates; it is melting, juicy, saccharine and high flavoured; ripe in August.

SCARLET. A middle sized fruit; of a beautiful scarlet colour next the sun, and pale red on the shaded side; the flesh separates from the stone, and is at maturity in August.

VERMASH, *Trus Vermash.* This fruit is rather of small size, and round form, tapering towards the eye; the skin is of a very deep red colour next the sun; and of a greenish hue on the other side; pulp rich, melting and juicy; at maturity in August.

WHITE, OR FLANDERS NECTARINE, *New White, Emerson's New White, Neale's White.* A middle sized, roundish, very pale fruit, slightly tinged with red next the sun; flesh tender and juicy, with a fine vinous flavour. The Pomological Magazine describes this as a clingstone; Lindley as a freestone.

CLINGSTONES, OR PAVIES.

BRUGNON VIOLET MUSQUE, *Brugnon Musque.* Fruit large; of a deep red and yellow colour; skin very smooth; flesh yellow, but red at the stone; saccharine, vinous, musky; at maturity in August and September.

EARLY NEWINGTON, *Early Black Newington, Lucombe's Seedling.* Fruit below the middle size, ovate, skin pale green, and on the sunny side of a deep red colour; pulp super-excellent; considered by some as the best of all nectarines; ripe in August and September.

GOLDEN. Fruit medium size, of the finest orange colour, delicately and beautifully mottled with red next the sun, which gives to it a clear waxen appearance; flesh firm, yellow, pale red at the stone, and has a poignant, rich flavour; ripens in August and September.

ITALIAN, *Brugnion or Italian.* A large globular or pale yellow fruit, marbled with dark red next the sun; flesh firm, yellow, red at the stone, juicy, rich and excellent; ripe in August.

RED ROMAN, *Roman Red.* A very excellent nectarine, of large size; the skin dark red next the sun, and of a yellowish hue on the other side; flesh yellowish, but red next the stone; it abounds with rich juice when fully ripe, in August and September.

SCARLET NEWINGTON, *Late Newington, Old Newington.* This variety is much esteemed; the fruit large, of a beautiful red colour next the sun, and of a fine yellow on the other side; its quality is excellent, being rich and juicy; early in September.

TAWNY NEWINGTON. Fruit large, somewhat ovate; tawny-coloured, marbled with dull red or orange next the sun; flesh pale yellow, but red at the stone; very juicy, sugary, and of the most delicious flavour; ripens in August and September.

ORANGE, LEMON, &c.

ORANGER, CITRONIER, &c. *Citrus.*

NOTWITHSTANDING this fruit, and also the Lemon, Lime, &c., are attainable at all seasons of the year, by supplies from our Southern States, the West Indies, and the South of Europe, yet the plants are entitled to our notice on account of their being so easily cultivated, and from their affording an ornament by exhibiting their fruit the whole of the year.

The Orange, as well as others of the same genus, are generally cultivated as green-house plants, but may be kept in a light room throughout our severe Winters, provided the temperature is not suffered to be below the freezing point, 32°. Its recommendations are, handsome evergreen, shining, tree-like forms; most odoriferous flowers, and

brilliant, fragrant, delicious fruits, which succeed each other perpetually, and are not unfrequently seen on the tree at the same time, in two or three stages of growth. A work has recently been published at Paris, edited by Messrs. Risso and Poiteau, which contains engravings and descriptions of one hundred and sixty-nine varieties. They are arranged as sweet Oranges, of which they describe 42 sorts; bitter and sour Oranges, 32 sorts; Bergamots, 5 sorts; Limes, 8 sorts; Shaddocks, 6 sorts; Limes, 12 sorts; Lemons, 46 sorts; Citrons, 17 sorts.

All the species of *Citrus* endure the open air at Nice, Genoa, and Naples; but at Florence and Milan, and often at Rome, they require protection during the Winter, and are generally planted in conservatories and sheds. In England, these trees have been cultivated since 1629; they are generally planted in conservatories. Loudon says that in the south of Devonshire, and particularly at Saltcombe, may be seen, in a few gardens, Orange trees that have withstood the Winter in the open air upwards of a hundred years. The fruit is as large and fine as any from Portugal. Trees raised from seed, and inoculated on the spot, are found to bear the cold better than trees imported.

At Nuneham, near Oxford, are some fine old trees, planted under a moveable case, sheltered by a north wall. In Summer, the case is removed, and the ground turfed over, so that the whole resembles a native Orange grove. The author of this work, being a native of Abingdon, which is within three miles of the Earl of Harcourt's estate, has had frequent opportunities of tasting the fruit, which he believes to be equal to that of warmer climates. At Woodhall, near Hamilton, trees of all the species of *Citrus* are trained against the back walls of forcing-houses, and produce large crops of fruit.

Any of the varieties of the Orange, Lemon, Lime Shaddock, Citron, &c., may be grafted or budded on stocks of the common Orange, or Lemon; but the seeds of Shaddocks and Citrons produce the strongest stocks; and on these may be engrafted such kinds as may be needed for a conservatory. The most suitable time for budding is July and August;

but this operation may be performed at any time when the sap is in motion. The directions for the management of greenhouse plants, apply also to this family of plants, to which I refer my readers. A friend of mine, who is a native of Rouen, in Normandy, informs me, that a Mr. Valee, of that city, succeeds in clearing about twelve thousand francs per annum from the flowers of Orange trees, which are distilled for essences, &c.

PEACH.

PECHER. *Amygdalus Persica.*

It is generally considered that the Peach is of Persian origin. In Medea, it is deemed unwholesome; but when planted in Egypt, becomes pulpy, delicious, and salubrious. It has been cultivated, time immemorial, in most parts of Asia; when it was introduced into Greece, is uncertain. The best Peaches in Europe are supposed to be grown in Italy, on standards.

The list of Peaches in the London Catalogue, contains two hundred and twenty-four names, fifty of which are denominated American Peaches. Several attempts have been made to class the varieties of Peaches and Nectarines by the leaf and flower, as well as the fruit. Mr. Robertson, a nurseryman at Kilkenny, has founded his arrangement on the glands of the leaves; and Mr. George Lindley, of London, has, in a peculiarly distinct manner, arranged no fewer than one hundred and fifty-five sorts of Peaches and Nectarines in well-defined divisions and sections. There are various instances on record, (*Hort. Trans.* vol. 1, p. 103.), of both fruits growing on the same tree, even on the same branch; and one case has occurred of a single fruit partaking of the nature of both. The French consider them, as one fruit, arranging them in four divisions; the *Peches*, or free-stone Peaches; the *Peches lisses*, or free-stone Nectarines, or free-stone Peaches; the *Pavies*, or cling-

stone Peaches ; and the *Brogons*, or Nectarines, or cling-stone smooth Peaches.

Although this fruit will thrive in any sweet, pulverized soil that is properly prepared, a rich sandy loam is the most suitable. Next to the selection and preparation of a suitable soil, a choice of good healthy trees is of the utmost importance. The seeds for stocks should be selected from the vigorous-growing young, or middle-aged healthy trees ; and the buds should be taken from some of the choicest fruit-bearing trees that can be found. Let the stocks be fairly tested before they are budded, and if any infection exist in the stocks, or in the vicinity of where the choice of buds may fall, reject them, if you wish to rear a healthy progeny ; as more depends on these particular points than many are aware of.

In this country, the Peach is generally budded on stocks of its own kind ; but in England it is often budded on damask Plum stocks, and some of the more delicate sorts on Apricot stocks, or old Apricot trees cut down : or on seedling Peaches, Almonds or Nectarines. (See article Nectarine. (Cobbett says, " there are thousands of Peach trees in England and France that are fifty years old, and that are still in vigorous fruitfulness." He attributes the swift decay of the Peach tree here to their being grafted on stocks of their kind."

Mr. Michael Floy, of the Harlaem Nursery, in a note, page 364 of the American edition of Lindley's Guide to the Orchard and Fruit Garden, edited by him, makes the following observations on this subject, which he says are the results of thirty years' experience as a nurseryman in the vicinity of New-York :—

" In this country Peaches are generally budded on Peach stocks. Their growth is very rapid, and they will form a tree large enough to transplant from the nursery, the first and second year after budding ; but notwithstanding the rapid growth of our Peaches, and their coming to maturity so early, with but little care and trouble, it must at the same time be admitted that they too often come to decay with almost the same celerity. A question here will naturally

arise on this subject, what can be done to remedy this? I answer, *first*, I think the Peach stock is defective; it is not sufficiently strong and lasting to make a permanent tree; the roots are soft and delicate, very liable to rot in cold heavy ground, particularly if suffered to stand in a sod, or where the ground is not kept clean, dry, and manured every season. *Secondly*, Supposing that the trees are planted in a warm, free soil, (which is the proper soil for the Peach,) they are liable to the attacks of the worm, which eats into their roots, and barks the trees all round, until they completely destroy them. No better method of destroying these worms has been discovered, than simply digging round the trees, and examining the infested plants, and where gum is seen oozing out, there the worm may generally be found and destroyed."

"I think an effectual remedy against this intruder may be found, by budding Peaches and Nectarines on the common bitter ALMOND STOCK. The worm does not like this stock. Peaches will take on it, and grow nearly as free as on the common Peach stock. *Thirdly*, The Peach stock causes the Peaches and Nectarines to grow too rapidly, making very strong shoots, these producing secondary or lateral shoots; and the fruit of the following Summer is produced on the top of these lateral shoots, instead of being produced on the principal or first shoots; this causes naked wood at the bottom, and a straggling unsightly tree, whose branches being heavy at the top with the fruit, are broken down by high winds. *Fourthly*, In addition to all this, the trees are of late years subject to what has been deemed a disease called the yellows, from the circumstance of the trees having a yellow and sickly appearance. Much curious philosophy has been spent on this subject without arriving at any satisfactory conclusion."

Mr. Floy, after discovering that the Almond stock is susceptible of injury from our Northern Winters in extreme cold weather, further recommends the Plum Stock in cold latitudes, and the Almond for our Southern States—hear him:—

"The Plum stock is undoubtedly the best for Peaches.

and Nectarines in the *Northern* and *Eastern* States, but especially for open dwarfs or espaliers, for which I give the following reasons:—*First*, The Plum stock prevents the too rapid growth of the shoots, and causes the principals to bear the fruit the following season, instead of producing lateral shoots the same season, and causing the tree to be more dwarf; the branches strong and fruitful to the bottom of the shoot, thereby having more fruit in a smaller compass. *Secondly*, It makes harder and less pithy wood, and enables it the better to withstand the cold; and this may be easily proved by cutting the branches of each—the shoot on the Plum stock will be twice as hard and firm as the one on the Peach stock; but *Thirdly*, and the most important reason is, that the Plum stock ceases to send up its sap early in Autumn, causing the Peach to perfect its wood before the cold weather sets in."

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As the failure of this fruit of late years has elicited considerable discussion and observation, which increases in interest annually, I hereby offer an exposition of my views on the subject, by a comparison between vegetable and animal matter, which I humbly conceive bear a striking assimilation to each other. If the reader should deem my arguments as visionary or speculative, I would remind him, that the grave importance of the subject fully justifies this or any other attempt at elucidation.

Having in page 311 shown the error of deep planting all descriptions of trees and plants, I would here observe, that a tree brought into a state of disease, by which the circulation of its nutrimental juices is impeded, and its bark injured, is very similarly situated to a timber post inserted in the soil; which every one knows, will rot between earth and air, however sound its other parts may be.

In venturing a comparison between vegetable and animal matter, I would first refer the reader to page 281, where I have shown that a Chestnut tree has been known to live

over a thousand years ; and that its timber, cut in proper season, is supposed to be in durability, commensurate with the age of the growing tree. It is also recorded in history, that animal subjects preserved on the Egyptian principle, have been known to keep as long as the most durable timber ; while daily experience shows, that corrupt animal and vegetable substances, not only become a prey to the most noxious insects and reptiles, but will generate them in incalculable numbers.

It is also evident, that a tree deprived of its functions or means of growing luxuriantly, is in a similar situation to a diseased animal. If disease be not checked before the juices of the tree become putrid, it will not only die, but will contaminate the earth in which it is planted, to the destruction of its neighbouring inmates of the garden or field. All experienced nurserymen admit this to be the case with diseased Peach trees, and some have actually abandoned their Peach orchards, and chosen fresh ground for new plantations.

It is precisely the same with smaller vegetable plants. A diseased Cabbage, for instance, by its excremental and corrupt juices being spent in the ground, will render the cultivation of the same or allied species a casualty ; and daily observation teacheth, that young and thrifty plants often fall a prey to worms and reptiles which were generated by a previous crop.

It is moreover evident, that all those enemies of the vegetable family feed on the same descriptions of vegetable matter which first generated them ; hence the Peach insects feed on its fruit in embryo, as well as in a state at, and even beyond perfection ; the Cabbage worms prey on plants of the same genera or species ; and I have no doubt but the cotton worms prefer the same description of vegetable matter which gave them birth, and that when these insects and reptiles cannot obtain the parts which are the most palatable to them, or congenial to their nature, they will feed upon diseased trees, plants, or any other matter which contain similar juices or nutriment. I again repeat, that the best security against their depredations is health and soundness.

A good sound healthy tree, planted and cultivated upon correct principles, may be justly considered as invulnerable to the attacks of insects and reptiles, as any species of healthy animal creature in existence.

As I have been more familiar with the cultivation of vegetables than fruits, I would state further my views relative to the Cabbage tribe. On New-York Island in the vicinity of the City, it is customary with gardeners to cut their Cabbages gradually as they are required for market, and often to leave their roots standing; these by some are ploughed under; where they not only feed, but generate their peculiar species of insects. Some gardeners take their roots and leaves to the cattle yard or dung heap, and return them back to the garden the ensuing season in the shape of manure. As a consequence of such practice, good Cabbages are very seldom obtained, even after a routine of other crops, for two or three years.

With a view to illustrate the evil of deep planting, I would observe further, that when Cabbage plants are transplanted in proper seasons and on good fresh soil, they generally prove uniformly good; whereas if it should happen, as it sometimes does, for want of suitable weather, that the plants cannot be transplanted until they get crooked and overgrown, so as to require deep planting to support them in the soil, such plants, like diseased Peach trees, decay first in the bark, between earth and air, and then from being deprived of a natural circulation of the vegetable juices, die, and discharge their putrid matter in the earth, to the destruction of such other plants as may be inserted in their stead. I have frequently known a land of Cabbage plants filled up half a dozen times, and the crop at last scarcely worth gathering, whereas could the plants have been set out while dwarfish, and inserted their proper depth in the ground, the cultivator would have been rewarded a hundred fold.

I dislike *tautology*, but cannot avoid repeating my humble opinion, that *deep planting* and injudicious culture are the causes of most diseases and failures of fruit trees; and in this way I account for Peaches being less plentiful than

they were, when left almost to Nature, which was the case I am informed in the beginning of the present century. That this malpractice in horticulture is very general, the most superficial observer may discover, by comparing the thrifty growth of those trees scattered by Nature in our highways and byways with many of those aided by the art of man. If any of my readers should require proof of my assertions, I can show them from the window of the room where this article was composed, scores of living, or rather dying, evidences of the evil of deep planting.

All the varieties of the Peach produce their fruit upon the young wood of a year old, the blossom buds rising immediately from the eyes of the shoots. The same shoots seldom bear after the first year, except on some casual small spurs on the two year's wood, which is not to be counted upon. Hence the trees are to be pruned as bearing entirely on the shoots of the preceding year, and a full supply of regular grown shoots must be retained for successional bearers. Cut out the redundant shoots, and all decayed and dead wood, and reduce some of the former bearers, cutting the most naked quite away.

A Peach Orchard may be planted at any time after the bud is established, until the trees are three or four years old, which may be placed from fifteen to twenty feet from each other, or from any other spreading trees. The dwarf kinds may be introduced into the kitchen garden, and trained against fences, as directed for the Apricot, or as espaliers, or dwarf standards.

SELECT DESCRIPTIVE LIST OF PEACHES.

FREESTONE PEACHES.

ASTOR. An excellent variety, originating in the city of New-York; the fruit is above medium size; skin pale yellow, with red cheek; flesh melting and pleasant flavoured; juice sweet and plentiful; ripe the latter end of August and early in September.

BELLE CHEVEREUSE, *Chevereuse Hative, Early Chevereuse.* Fruit medium size, oblong form, and of a red and yellow colour; ripens in August; the pulp is rich, juicy, and sugary; tree a good bearer, and the fruit highly esteemed.

BELLE DE VITRY, *Admirable Tardive, Bellis.* A large fruit, of fine red colour next the sun, on the opposite side a yellowish white; flesh white, stained with red at the stone; firm, juicy, sweet, vinous and excellent; ripe early in September.

BELLEGARDE, *Galande, Violette Hative, Noire de Montreuil.* The tree is vigorous and productive; fruit above medium size, globular; skin greenish yellow, and on the sunny side rich deep red, with dark purple streaks; flesh pale yellow, very melting, saccharine and juicy; a first-rate fruit, early in September.

BREVOORT'S SEEDLING MELTER. A superior peach, raised by Henry Brevoort, Esq. of New-York; skin of a dingy white colour, with red cheek; flesh white, firm, rich, and sugary; ripe by the middle of August.

DOUBLE MONTAGNE, *Sion, Early Double Mountain.* A beautiful and excellent peach of middle size; skin greenish white, but soft red, marbled with a deeper red next the sun; flesh white and melting; juice plentiful and highly flavoured; ripe in August.

GREEN NUTMEG, *Ear'y Anne, Avant Blanche.* This variety is said to have originated in Berkshire, England. The fruit is small; its colour yellowish green; its pulp melting, juicy, of very pleasant flavour, and ripens early in August. Murray's Early Anne is a variety raised from the seed of this.

EARLY ORANGE, *Yellow Rare Ripe, Yellow Malacotan, Rare Ripe Early Yellow.* Fruit under a medium size, inclining to the oval shape, apex full, with a small tip; skin greenish yellow; flesh a fine yellow, juice rich and sweet, but not plentiful; ripe in August. There are several varieties under the same name, some of which are inferior to the true Orange Peach.

EARLY ROYAL GEORGE. A superior variety, of medium size, and rather globular form; skin yellow, with red cheek; flesh melting and delicious; in August. There are several varieties cultivated under this name, differently described.

EMPEROR OF RUSSIA, *Serrated Leaf, New Cut-Leaved Unique.* The fruit of this species is deeply cleft, one half of it projecting considerably beyond the other; the skin is downy, of a brownish yellow and red colour; flesh melting; juice sweet and delicious; towards the end of August. This sort was found by Mr. Floy, in New Jersey, 1809, and all the stones of this fruit are said to produce plants with jagged leaves.

FORD'S SEEDLING. A middle sized peach of a beautiful pale rose colour, marbled with bright red; flesh yellowish green quite to the stone from which it separates; juice plentiful, and of a rich poignant flavour; in August and September.

GEORGE THE FOURTH. An excellent peach, of medium size and globular shape; of pale yellow colour in the shade, and dark red next the sun; flesh yellow, but red at the stone from which it separates; a fruit of very superior flavour when at maturity, which is early in September; it originated in the garden of Mr. Gill, Broad-street, New-York.

GROSSE MIGNON, *Veloutée de Merlet, Grimwood's Royal George, Large French Mignon, Vineuse.* One of the most beautiful and delicious varieties in cultivation. The fruit is large, of a beautiful red or rose colour, and greenish yellow; pulp tender, juicy and high flavoured when in perfection, which is early in September.

HEATH FREESTONE, *Kenrick's Heath.* This variety was first obtained from the late General Heath, of Roxbury, near Boston. The fruit is very large, oblong and beautiful, frequently weighing half a pound; colour pale yellowish green, with crimson or violet next the sun; its flesh is melting, juicy, rich, vinous, agreeably acid, and good; ripens late in September and October.

HOFFMAN'S POUND, *Morrison's Pound.* This fruit is by some called the *Morrissania*, from its having been first obtained by Mr. Floy, from Gouverneur Morris; but it originated with Martin Hoffman, Esq. of New-York. The fruit is very large; skin brownish white and red; flesh yellow, firm, very juicy and delicious, parting from the stone; greatly esteemed from its ripening late, in September and October.

LATE ADMIRABLE, *Royale, Royal, Bourdine.* Fruit large, roundish, inclining to oblong; suture deeply impressed along one side, having the flesh swelling boldly and equally on both sides, with a slight impression on the summit; skin downy, of pale green colour, streaked with dull tawny red; flesh white, delicate, melting, juicy and high flavoured; a magnificent peach, ripening in September. Mr. Prince has the *Teton de Venus* under this head as a synonyme; but it is generally considered a distinct variety.

MALTA, *Peche Malte, Belle de Paris, Malte de Normandie, Italian Peach.* Fruit above the medium size; colour pale yellowish green, marbled with purplish red; flesh yellow, juicy, rich, vinous, and of superior flavour; ripens at the end of August.

MADELEINE DE COURSON, *Madeleine Rouge, Rouge Paysanne, Red Magdalen of Miller.* An excellent fruit, of large size, and fine yellow and red colour; ripens at the end of August; flesh firm, white, but red at the stone; sugary and very rich.

MAMMOTH, *Saarte Mout, or Aunt Sarah's Peach.* A large variety cultivated in New-York under the latter name in the eighteenth century, by H. Brevoort; its skin is pale green, with a brownish cast on the exposed side; flesh greenish yellow, sweet and rich, separating freely from the stone; early in September.

MONSTROUS LEMON, *Largest Lemon.* This variety was first discovered in the garden of Mr. Tiebout, now Union Place; the fruit is of the largest size, and in the gardens of two persons in New-York, has weighed seventeen ounces, as stated by Mr. Prince. He says the tree does not bear well, unless the situation is a sheltered one; the fruit is late in ripening.

MORRIS'S RED FREESTONE, *Red Rare Ripe.* Fruit nearly round, of large size, apex a little sunken; skin greenish yellow, with red cheek;

flesh delicious and melting; a first-rate variety; ripe towards the end of August.

MORRIS'S WHITE FREESTONE, *White Rare Ripe, Luscious White Rare Ripe, Philadelphia Freestone*. Fruit large, and inclining to the oval form, sature even, but not deep; apex a little sunken; skin white or rather yellowish; flesh white, juicy, rich and sweet; ripe in September.

NEIL'S EARLY PURPLE, *Early Purple of Miller, Johnson's Purple Avant, Padley's Early Purple, Veritable Pourpree Hative, Peche du Vin*. One of the most beautiful of peaches; of medium size; skin yellow, but on the sunny side of a fine deep red and purplish colour; it ripens by the middle of August; flesh melting, juicy, with a rich vinous flavour; an excellent fruit.

NEW ROYAL CHARLOTTE. *Queen Charlotte, New Early Purple, Kew Early Purple*. A delicious peach, rather above medium size; skin pale greenish white, with deep red next the sun; flesh greenish white, rich and agreeable; ripe in August.

NOBLESSE, *Mellish's Favourite*. The tree is of a vigorous growth, and very productive; fruit large, somewhat oval; of a pale red colour, marbled with different shades; pulp juicy, rich, and melting when at maturity, which is in August and September.

PRESIDENT. This variety originated at Bedford, on Long Island. It is a rich, melting, juicy fruit, of large size, roundish, with a shallow sature; skin very downy, dull red next the sun, pale yellowish green in the shade; the surface covered with small red dots; a first-rate peach; ripe in September.

RED CHEEK MALACATUNE, *Yellow Malacaton, Alberge Incomparable, Lady Gallatin Probyn Peach, Hoggs' Malacaton*. This variety originated at the Flushing Nursery; the fruit is of large size and oval form; its colour is yellow, with a red cheek on the sunny side; the flesh is also yellow, melting, rich, juicy and luscious. There is another variety of this fruit, which originated with Mr. Polls, of New-York, said to be very productive, and of excellent quality; ripens in September.

ROYAL KENSINGTON. An excellent variety, of medium size; skin pale greenish yellow, marbled with red; flesh pale yellow; juice rich, and of a highly vinous flavour; ripe in August.

SMOOTH-LEAVED ROYAL GEORGE. This is considered by Lindley as a very superior variety; fruit above the middle size, globular, depressed; skin yellowish white, but of a beautiful red or carmine colour next the sun; flesh melting; juice plentiful, and of a high vinous flavour; early in September.

SWEET WATER, *Early Sweet Water*. This variety is said to have originated at Flushing; its form is round, and its colour whitish green, with a red blush at maturity, which is early in August; the flesh is very tender, melting, rich and juicy.

TETON DE VENUS. There are two or three varieties bearing this name; the fruit of the best variety is large, globular; of a pale yellowish green colour, marbled with red; flesh greenish yellow, but red at the stone; a delicious flavoured peach; ripe in September.

VAN ZANDT'S SUPERB, Waxed Rare Ripe. This variety originated with Mr. Van Zandt, of Flushing; its form is oval; its skin smooth, somewhat mottled, and of a beautiful waxen appearance; flesh melting, and of excellent flavour; in August and September.

WASHINGTON PEACH, Boyce Peach. A first-rate peach; colour a pale yellow in the shade, but dark red next the sun; flesh very juicy and delicious; ripens towards the end of August. A peculiar trait in this peach, is its rapid growth; it will, while ripening, in about ten days, nearly double its ordinary size, weighing over half a pound.

WHITE BLOSSOM, Willow Peach, White Blossomed Incomparable. This variety originated on Long Island; the fruit is perfectly white, of an oval form and handsome appearance; the flesh is also white, melting, juicy and pleasant; it is much used for preserves when not over ripe, and is at full maturity in September.

YELLOW ADMIRABLE, Abricote'e, Admirable Jaune, Peche D'Orange, Grosse Jaune, Peche de Burai, Sandalie, Hermaphrodite, Apricot Peach. The fruit of this variety is large; yellow white immature, but laved with red when ripe; flesh firm, yellow; flavour similar to the apricot; ripe late in September.

PAVIES, OR CLINGSTONE PEACHES.

CATHERINE. Fruit large, round, variable; colour a beautiful red next the sun, marbled and dashed with darker shades; pale yellow in the shade; flesh very white, tinged with yellow; juice abundant, and of very rich and sweet flavour; tree a good bearer; its fruit ripe in September.

CONGRESS CLINGSTONE. A fine large round peach; skin yellowish white, marbled with red; flesh melting, juicy, and of delicious flavour; in September.

EARLY NEWINGTON, Smith's Newington, New-York Early Newington. A much esteemed fruit; its colour in the shade is white, but next the sun red; its form is globular: its flesh is juicy, rich, and high flavoured. The tree is productive, and the fruit matures in August.

HEATH, HEATH CLINGSTONE, Late Heath, Late October. Mr. Prince says, that the original tree of this variety was discovered growing wild on the farm of the late Judge Willet, of Flushing, and took its name from its being found in a barren field. The fruit is very large, of oval or oblong form; the skin is downy, nearly all white; the flesh is peculiarly rich and highly flavoured, tender, melting, and juicy. There is another variety mentioned by Mr. Kentrick, and called by the same name, said to have been raised from a stone brought by Mr. Heath from the Mediterranean.

INCOMPARABLE, Pavia Admirable. The fruit of this esteemed variety is large and roundish; the skin pale yellow colour, shaded with scarlet or deep crimson next the sun; flesh pale yellow, juice sugary and well flavoured; ripe in September.

LEMON CLINGSTONE, *Kennedy's Carolina*, *Pine Apple Clingstone*, *Hayte's Lemon Clingstone*, *Lemon Largest*, *Large Yellow Pine Apple*. This fruit is of large size and oval shape; yellow in the shade, but bright red next the sun; it resembles a lemon, having a nipple at the apex; some have weighed twelve ounces; its flesh is firm, and is at maturity in New-York by the end of September.

MONSTROUS PAVIE OF POMFONNE, *Gros Molecoton*, *Gros Persique*, *Rouge Pavie Monstreux*, *Pavie Cornu*. Fruit very large, roundish, with an obtuse nipple; skin downy, of a fine red and greenish white colour; flesh white, deep red at the stone, juicy and vinous, excellent for preserving; in October.

NEW-YORK WHITE CLINGSTONE, *Williams's New-York*. Fruit large, round, with a pointed apex; skin white, tinged with rose; flesh yellow, melting or soft, but adhering closely to the stone; juice very plentiful, sweet, luscious and high flavoured. Ripe in September.

OLD MIXON CLINGSTONE. Of all clingstone peaches, this is considered the most delicious; the skin is yellow, with a bright red cheek, marbled; flesh red at the stone, rich, juicy, sweet and high flavoured; the fruit ripens gradually in September. This variety is cultivated in Massachusetts under the above name, but the tree and fruit are so similar to the Old Newington, as to render it doubtful whether it is a distinct variety.

OLD NEWINGTON, *Newington*. The fruit of this variety is large, rather globular, of a fine bright red and pale yellow colour, marbled with dashes and streaks of a deeper colour; the flesh is yellowish white; but red at the stone; also juicy, rich, sweet, and well flavoured; the tree is very productive, in September.

PAVIE MADELINE, *Pavie Blanc*, *Molecoton*, *Myrecoton*, *Merlicoton*, *Persique a Gros-Fruit Blanc*. The fruit of this variety is of medium size, somewhat broadly globular; skin pale yellowish white and marbled red; flesh yellowish white to the stone; juice sugary and of an agreeable flavour; towards the end of August and in September.

PEAR.

POIRIER. *Pyrus*.

THE Pear tree, in its wild state, is thorny, with upright branches, tending to the pyramidal form, in which it differs materially from the Apple tree. The twigs, or sprays, hang down; the leaves are elliptical, obtuse, serrate; the flowers in terminating, villose corymbs, produced from wood of the preceding year, or from buds gradually formed on the

several years' growth, on the extremities of very short protruding shoots, technically called spurs. It is found in a wild state in England, and abundantly in France and Germany, as well as in other parts of Europe, not excepting Russia, as far North as lat. 51. It grows in almost any soil. The cultivated tree differs from the Apple, not only in having a tendency to the pyramidal form, but also in being more apt to send out tap roots; it being, as a seedling plant, longer (generally from fifteen to eighteen years) in coming into bearing; and when on its own root, or grafted on a wild Pear stock, of being much longer lived. In a dry soil, it will exist for centuries, and still keep its health, productiveness, and vigour. There are fewer good sorts of Pears, in proportion to the number of current varieties than Apples. The Romans had thirty-six varieties in Pliny's time: there are now several hundreds in the French and British nurseries; the London Horticultural Catalogue contains the names of six hundred and twenty-two. Professor Van Mons, of Brussels, and M. Duquessie, of Mons, fruited about eight thousand seedling Pears, from which they obtained nearly eight hundred sorts worth cultivating, (Neil's Hort. Jour.) The varieties are divided by the French into different classes of fruits, which are designated as *Beurrees*, *Crevers*, *Poiree*, &c.

CRITERION OF A GOOD PEAR.—Dessert Pears are characterized by a sugary aromatic juice, with the pulp soft and sub-liquid, or melting, as in the *Beurrees*, or Butter Pears; or of a firm and crisp consistence, or breaking as in the Winter Bergamots. Kitchen Pears should be of a large size, with the flesh firm, neither breaking nor melting, and rather austere than sweet. Perry Pears may be either large or small; but the more austere the taste, the better will be the liquor; excellent perry is made from the wild Pear.

Pear trees are propagated by grafting in the Spring, or budding late in the Summer, and also by seed taken from the best sorts for the purpose of obtaining new varieties. In raising Pear stocks, the wild Pear is preferred in Europe, as being calculated to produce plants more hardy and durable than the cultivated sorts; and for dwarfing and precocity, the Quince is preferred.

The Pear is a much handsomer upright growing tree than the Apple; more durable, and its wood hard and valuable for the turner and millwright; but its blossoms being white, are less showy than those of the Apple.

A Pear Orchard may be planted at any time after the trees are two years' old from the graft; and as trees from young stocks will not come into full bearing until ten or twelve years old, they will bear removing with care at any time within that period. They may be planted at from twenty to thirty-five feet distance from each other, according to the nature of the tree. The dwarf varieties may be planted in the kitchen garden, and trained either as espaliers or dwarf standards.

Standard Pear trees will require but little pruning after the heads are once formed; in doing which, the branches should be permitted to extend on all sides freely. Several years may elapse before any cross-placed, very irregular, or crowded branches, require pruning; yet there are some kinds whose form of growth resembles the Apple; such will need frequent pruning. "The Pear tree," Mr. Phail says, "does not produce blossoms on the former year's wood, as several other sorts of trees do. Its blossom buds are formed upon spurs growing out of wood over one year old, and, consequently, projecting spurs all over the tree must be left for that purpose." In some Pears, Knight observes, "the fruit grows only on the inside of those branches which are exposed to the Sun and air; in others it occupies every part of the tree." Withering says, that "the French make perry, or *poire*, from the fermented juice of the Pear, which is little inferior to wine; and that even the bad eating kinds, pared and dried in an oven, will keep several years with or without sugar.

SELECT DESCRIPTIVE LIST OF PEARS.

SUMMER FRUIT.

DEARBORN'S SEEDLING. This variety originated in the garden of the Hon. H. A. S. Dearborn, of Roxbury. The tree is of vigorous growth;

fruit of medium size, rounded at the crown, and regularly diminishes in a parabolic manner to the stalk; the skin is smooth, thin, green, with russet spots; at maturity it turns to a delicate yellow; flesh very melting, and of the finest flavour; in August.

GOVERNOR STUYVESANT. This pear took its name from its having been first cultivated at Stuyvesant's farm on New-York Island. The original tree is upwards of 200 years old, and produces fruit in August of a medium size, of a greenish yellow colour; juicy, sweet, aromatic and excellent.

JARGONELLE, Epargne, Beau Present, Saint Sampson, Grosse Cuisse Madame, Saint Lambert, Poire des Tables des Princes. Fruit rather large, oblong, of a pale green colour, a little marked with red; flesh melting, juicy, with a slightly acid, rich and agreeable flavour. It ripens early in August, is one of the most productive of all pears, and the very best in its season.

JULIENNE OF COXE, L'Archiduc D'Ete, Summer Beurre, Summer Doyenne, Summer St. Michael, so called near Boston, *Bloodgood Pear* of New-York. Fruit medium size, smooth, bright yellow at maturity, with a faint blush next the sun; form rather ovate, tapering towards the stalk; flesh perfectly melting, rich and juicy. The tree bears young, and most profusely, and matures its fruit in August and September.

LONDON SUGAR. This fruit is below medium size; colour greenish yellow, tinged with brown; form turbinate, narrowed at the crown; flesh tender, melting, saccharine, of a rich musky flavour; an excellent early fruit, and very productive. Ripe in July and August.

MADELEINE, Magdalene, Citron des Carmes, Early Charentelle. This pear is of medium size, pale yellow, with an occasional blush next the sun; flesh white, melting, perfumed. A fine old fruit, ripening towards the end of July.

PREMATURE: A new pear, about the size of the Crawford, but more juicy and delicious, and remarkably early; it commands a good price in the markets of Edinburgh, Scotland, and is reputed a most superior early fruit, ripening in July and August.

ROUSSELET DE RHEIMS, Petit Rousselet. Fruit small, pyramidal, greenish yellow at maturity, but brown red next the sun, with russety spots; flesh half beurre, fine, very perfumed. Good to put in brandy, and to dry; in August and September.

SABINE D'ETE. This pear is of pyramidal form, terminating in a round blunt point at the stalk; colour yellow, but fine scarlet next the sun; the whole surface smooth, regular and polished; flesh white, melting, juicy and highly perfumed; the tree is an abundant bearer, and ripens its fruit in August.

SKINLESS PEAR, Poire sans Peau, Fleur de Guignes. A small oblong pear; the skin, which is very smooth and thin, is pale green, marbled with red and yellow; flesh crisp, sweet, and of pleasant flavour; the tree is very prolific, ripening its fruit in August.

SUMMER FRANCREAL, Francreal d'Ete, Fondante, France Canoe, Gros

Micot d'Ets. Fruit above medium size; shape oblong, thickest about one-third from the eye; skin yellowish green; flesh melting, rich and excellent; ripe early in September.

SUMMER ROSE, Thorny Rose, Epine Rose, Poire de Rose, Rosenbirne Kraft. A pear of medium size, in form resembling an apple; the skin is dull yellow, spotted with russet, and marbled with red; a very productive variety, ripening its fruit early in August.

WILLIAMS'S BONCHRETIEN, Bartlet. This fruit originated with a Mr. Wheeler, at Aldermaston, in Berkshire, England, but was subsequently extensively propagated by Mr. Williams, near London—hence its name. The fruit is large, oblong; the stalk thick and fleshy, an inch long; the colour at maturity yellow, tinged with red; flesh whitish, very melting, and delicate; juice perfumed, sweet and abundant. Tree very productive, and fruit ripe by the end of August.

WINDSOR, Guise Madame of the French. A middle sized oblong pear; colour greenish yellow, but brownish red next the sun; half melting, sweet, a little musky, rather coarse, but a good dessert fruit in its season; ripe by the end of August.

AUTUMN FRUIT.

AUTUMN BERGAMOT, Common Bergamot, York Bergamot. Fruit globular, depressed, the skin rough, yellowish green, and dull brown; flesh pale, melting, juicy, sugary, and perfumed; ripe in September and October. This variety has been cultivated in England from the time of Julius Cæsar, and is still considered a first-rate pear in its season.

BELLE ET BONNE, Schone und gute. Fruit very large, globular, depressed, the stalk long; skin greenish yellow, but next the sun yellow, with spots of russet; flesh white, sweet, exceeding rich and agreeably perfumed. The tree is very productive, and the fruit ripens in September. This variety has been cultivated under the erroneous names of *Charles d'Autriche*, *Belle De Bruxelles* and *Bergamotte Crussanne*, which are distinct fruits.

BROWN BEURRE, Beurre Rouge, Beurre d'Or, Beurre Doie, Beurre du Roi, Beurre d'Amboise, Isambert, Red Buerre, Golden Beurre, Poire d'Amboise. This was formerly considered the best of all pears in its season. Fruit rather large, of greenish yellow, and dusky red colour, covered with thin russet; flesh melting, buttery, rich and excellent; at perfection in October and November.

CHARLES D'AUTRICHE, Charles of Austria. A fine and beautiful fruit, large, three and a half inches long, and three inches broad; colour greenish yellow, with brown spots and partially russeted; flesh white, melting, juicy, and delicious. Ripe in October, and good in November.

CAPPAUMONT, Beurre de Cappaumont. This variety is much esteemed, in the vicinity of Boston. Fruit of medium size, turbinate; skin yellow, tinged with fine red or cinnamon; flesh yellowish, melting, very rich and high flavoured; in September and October.

DELICES D'ARDENPONT, *Delices d'Hardenpont de Toulouse.* Fruit above medium size; oblong, pyramidal; skin yellow at maturity, and partially covered with a thin cinnamon coloured russet; flesh yellowish white, nearly melting; juice pleasant, sweet and abundant; in October and November.

DIX A native variety originating in the garden of Mr. Dix, in Boston; fruit large, oblong; skin when ripe, yellow, with a blush of red; flesh melting, juicy and rich; in October and November.

DOTENNE SANTELETE. A new, fine, handsome Flemish pear; fruit above the middle size, pyramidally oblong; skin pale green, speckled with gray russet; flesh white, a little gritty, but tender; juice saccharine, with a slight musky perfume. The tree is hardy, and ripens its fruit early in October.

DUCHESS OF ANGOULEME, *Duchesse d'Angouleme.* A pear of first-rate excellence. Form roundish, oblong, tapering towards the stalk; skin dull yellow, with broad russet patches; flesh rich, melting, very juicy, and high flavoured, with a most agreeable perfume. Specimens of this fruit have been shown in England, weighing twenty-two ounces. At perfection in October and November.

GANSEL'S BERGAMOT, *Broca's Bergamot, Ives's Bergamot, Bonne Rouge.* Fruit varying from middle size to large; ovate, flattened; colour dull green, slightly red next the sun; flesh white, melting, sweet, rich and high flavoured. A delicious pear, ripe in October and good till Christmas.

GOLDEN BEURRE OF BILBOA. This variety was imported from Bilbao, by Mr. Hooper, of Marblehead: the original name being unknown. Fruit of medium size, oblong; colour a bright golden yellow, with patches of russet; perfectly melting, and of fine flavour. A beautiful pear tree, a great bearer, and worthy of cultivation, ripe in October.—

GORE'S HEATHCOT. A native variety, highly esteemed in Massachusetts. Fruit of medium size; form long; skin of a uniformly light yellow; flesh melting, juicy, and high flavoured. The growth of the tree is handsome and vigorous, producing abundant crops in September and October.

GREEN SYLVANGE, *Sylvange Vert, Bergamotte Sylvange.* A most superior pear, of medium size, skin rough and green, speckled with gray or black. The flesh is greenish near the skin, white in the centre, soft, saccharine and juicy. Fruit in perfection from October to Christmas. The tree is a great bearer, and specimens of the fruit have been known to weigh thirteen ounces.

HACON'S INCOMPARABLE, *Norfolk Seedling.* Fruit middle sized, of pale yellow colour, mixed with green, partially covered with orange russet; flesh yellowish white, slightly gritty, but very tender, juicy, sweet and rich; and possessing a high musky and perfumed flavour. The tree is a great bearer, and the fruit excellent, in November and December. A silver medal was given to the originator of this fruit, as a prize, in England, 1830.

HARVARD, L'Epergne. This variety is highly prized in the Boston markets; fruit above medium size; oblong, swollen at the crown; skin russetty yellow, tinged with red; flesh white, juicy and melting; in September and October.

MARIE LOUZE. Fruit oblong, tapering towards both ends; size varying from medium to large; skin nearly smooth, yellowish green, and cinnamon coloured russet; flesh white, melting, juicy and rich. It ripens in October and November, and is an excellent fruit in its season.

MOOR FOWL EGG. Fruit rather small, globular, ovate, swollen in the middle; skin orange brown next the sun, with spots of russet; flesh yellowish white, a little gritty, but tender and mellow, juice saccharine, a little perfumed. This is a hardy Scotch variety, ripe in September and good in October.

NAPOLEON, Medaille, Sawageon Liart. Fruit large, form of the Colmar; skin smooth; colour bright green, but at maturity, pale green; flesh very melting, with an unusual abundance of rich agreeable juice. At perfection in October and November.

PRINCESSE OF ORANGE, Princess d'Orange. The fruit is roundish; the skin bright reddish orange russet; flesh yellowish white, sugary and rich, in some seasons perfectly melting, but occasionally a little gritty. A beautiful pear, and of good quality; in October.

SECKLE, New-York Red Cheek, Red Cheek Seckle, Sytle. An excellent native fruit, in size rather small; colour varying from yellowish to brownish russet, but bright red next the sun, flesh melting, spicy, and of a most extraordinary rich flavour. This fruit grows in clusters, in great abundance, and is at perfection in September and October.

SWAN'S EGG. Fruit small, of a oval, turbinate figure, colour yellowish green, and dull russetty brown; flesh tender and melting, with a rich, saccharine, musky flavour. An excellent fruit, ripe in October. The tree is remarkably tall, upright vigorous and productive.

URBANISTE The fruit is of medium size, pyramidally ovate; skin pale green, inclining to yellow, with green streaks; flesh white, but reddish yellow next the core; it is quite melting, juicy, and very sweet, with a little perfume. It ripens from the middle of September to November.

WILKINSON. A native pear from Cumberland, R. I. The tree bears young, and is very fruitful; size above medium; form oblong; skin yellow, with a brownish black; flesh white, juicy and melting; at perfection in October and November.

WINTER FRUIT.

BEURRE D'AREMBERG, Beurre d'Arembert, Duc d'Aremberg, Poire d'Aremberg, Beurre Deschamps, Beurre Ophelins of Deschamps. The English and French writers speak of this pear as one of the best in cultivation. The tree is a great bearer, comes early into cultivation, and the fruit will keep till March. Fruit large, turbinate; skin of a delicate

pale green dotted with russet, which becomes of a deeper yellow at maturity; flesh whitish, fine, very juicy, perfectly melting, and very extraordinary rich, sweet, high flavoured and excellent.

BEURRE DIEU, *Dieu's Butterbirne*, *Dorothee Royale*, *Beurre de Yelle*, *Beurre Royale*, *Poire de Melon*. This ranks amongst the best of pears. The tree is of vigorous growth; fruit when in perfection, four inches long, and three inches broad; the skin at maturity is bright orange, with reddish russet; flesh clear white, tender, melting, and juicy, and of a delicious aromatic flavour; from November to January.

BEURRE RANCE, *Beurre Epine*, *Hardenpont de Printemps*. This is said to be a first-rate pear. The tree is vigorous and a good bearer; fruit middle sized, oblong; skin deep green, with russety specks; flesh green, melting, having a delicious rich flavour, with very little acid. It shrivels in ripening, but will keep till April.

BEZY VAET, *Bezy de Saint Vaast*. Fruit somewhat the shape of a Swan's Egg, but larger; skin dull green, covered with russety spots; flesh yellowish; perfectly melting, sweet and agreeably perfumed; at perfection in November and December.

CATILLAC. Fruit very large rather turbinate; pale yellow, stained with red; flesh firm and breaking; its flavour astringent; an excellent baking pear; from November to April.

CHAUMONTEL, *Bezy de Chaumontelle*, *Poire de Chaumontelle*, *Beurre d'Hiver*. This noble old variety is a fruit varying in size, from large to very large; its colour at maturity yellow, tinged with brownish red next the sun; its form variable; flesh melting, juicy, sweet, musky, excellent: in season from November to February.

COLMAR, *Poire Mann*, *Bergamotte Tardive*, *Incomparable*. This fruit is rather large; skin smooth, of a green colour, changing to a yellow at maturity; form pyramidal; flesh melting, juicy, saccharine, and of excellent flavour. The fruit is in perfection from November to February.

EASTER BEURRE, *Bergamotte de la Pentecote*, *Beurre d'Hiver de Bruzelles*, *Doyenne d'Hiver*, *de Bruzelles*, *Bezy Chaumontelle Tres Gros*. Of all the late keeping pears, this is considered the best. (for England.) Fruit large, roundish, oblong; colour green, but yellow at maturity, with specks of russet brown; flesh yellowish white, perfectly buttery and melting, also extremely high flavoured; it is eatable in November, and will keep till May: it is a most profuse bearer, on a quince stock.

ECHASSERY, *Bezy de Chassery*, *Bezy de Landry*, *Poire d'Œuf*, *Ambrette*, *Tillon* of New Jersey. Fruit middle size, of a roundish turbinate figure, something like a Citron, or the Ambrette; skin smooth, greenish yellow, with gray specks; flesh melting, juicy and delicious: from December to March.

GLOUT MORCEAU, *Gloux Morceaux*. A very large Belgic variety, of great excellence; fruit of ovalish form, pale green colour, inclining to yellow, with russety specks and blotches; flesh whitish, firm, very juicy and excellent; in perfection from November to March.

HOLLAND BERGAMOT, *Bergamotte de Holland, D'Alencon, Amoselle, Lord Cheney's*. Fruit very large, globular, but broadest at the crown, flattened; of greenish yellow colour, marbled with russet; flesh half breaking, juicy, and high flavoured. It keeps till May, and succeeds on the quince.

LEWIS. This variety originated on the farm of Mr. I. Lewis, of Roxbury, Mass. The size is medium; form somewhat globular; skin when ripe, a greenish yellow; the flesh is white, very melting, juicy and excellent, from November to March. The tree grows quick, and bears abundance of fruit.

LOUISE BONNE, *Good Louise Avanchie*. A large pear, somewhat oblong, resembling the *St. Germain*; skin yellowish green; flesh extremely tender, and full of an excellent saccharine, well flavoured juice. A first-rate fruit, from October to Christmas.

NEWTOWN VERGALEAU. A large pear, of a yellow colour, with a very short stalk; the tree grows very crooked and of an irregular form, bending by the weight of its fruit, which is excellent to preserve, or for baking. Its productiveness renders it desirable in an orchard.

PASSE COLMAR, *Fondante de Panisel, Passe Colmar Gris dit Precel, Poire Precel, Passe Colmar Epineux, Beurre Colmar Gris dit Precel, Beurre d'Argenson, Chapman's*. A most valuable pear, of medium size, conical, flattened next the eye; skin at maturity yellowish, sprinkled with russet, a tinge of red next the sun; flesh yellowish, melting, juicy, rich and excellent. The tree is a good bearer, and the fruit is in perfection from November to February.

POUND PEAR, *Black Pear of Worcester, Parkinson's Warden, Grande Monarque, Lièvre, Groote Mogul, Gros Rateau Gris, Love Pear*. Fruit very large, of a roundish turbinate figure; skin rough, covered with dull russet; flesh hard and coarse, but excellent when baked or stewed in Winter. Grafted on a pear stock. The tree bears so abundantly, as to bend like a weeping willow.

SAINT GERMAIN, *Inconnue de la Fare*. This celebrated ancient fruit is large, of a green colour, covered with russet spots; at maturity a yellowish cast; its flesh very melting, juicy, saccharine, slightly acid, and delicious; it ripens in November and may be kept till March.

TILLINGTON. A fine English variety, highly esteemed in Massachusetts; in size medium, form turbinate: colour dull green and dull red, russetted; flesh white: particularly sweet and rich, though not very juicy: good from November to February.

WINTER NELIS, *Nelis d'Hiver, La Bonne Malinoise*. All accounts agree that this is a most excellent Winter pear: its size is above medium, somewhat oval: its skin green and russetty, full of gray dots: flesh yellowish white, melting, high flavoured, with a musky perfume. At perfection in December and January.

PERRY PEARS.

BARLAND. This variety took its name from the original tree, growing

in a field called Bare Lands, in Herefordshire, England. The fruit is smallish, of ovate form: skin dull green, russetted with gray. It is deemed excellent for perry. Specific gravity of its juice 1070.

HOLMORE. Fruit small, globular: skin of a dingy yellowish green, tinged with red. Excellent perry is made of this variety in Herefordshire, England. Specific gravity of its juice 1066.

HUFFCAP. There are several varieties of pears bear this name, but the best perry is made of the true Herefordshire Huffcap. The fruit is middle sized, of pale green colour, marked with gray russet. Specific gravity of its juice 1070.

MONARCH. A new pear, considered by Mr. Knight as without a rival. The tree is of rapid growth, and an abundant bearer: fruit large, of an extraordinary musky flavour, and deemed excellent for perry: good also for the table: from October to December and January.

OLDFIELD. Fruit below the medium size, of pale green colour, with russetty spots. An excellent perry fruit. Specific gravity of its juice 1067. From this variety is made the celebrated Ledbury Perry.

LONGLAND. Fruit very handsome, much like the swan's egg in shape: skin bright gold colour, tinged and mottled with a russetty lively orange: specific gravity of its juice 1063. The tree is handsome and upright, and much cultivated in Herefordshire for perry.

TEINTON SQUASH. Fruit middle sized, of angular shape: skin a muddy russetty green, marbled with dull orange, interspersed with ash-coloured specks. It originated in Teinton, Gloucestershire, and the perry made from this fruit is of the very highest quality, something approaching in colour and briskness to champagne, for which fine samples of it have sometimes been sold.

PLUM.

PRUNIER. *Prunus.*

The Plum tree rises fifteen feet in height, branching into a moderately spreading head; the leaves are ovate, serrated, and on short petioles; petals white. The natural colour of the fruit is generally considered to be black; but the varieties in cultivation are of yellow, red, blue, and green colours, and of different forms and flavours. There are several good sorts grow wild in the hedges of Britain, and also in America, but its original country is supposed to be Asia; and according to Pliny, it was taken from Syria into Greece, and from thence into Italy. There are many

varieties cultivated in France ; and in the London Horticultural Garden there are two hundred and ninety-eight sorts kept under name. The green Gage is considered the best dessert Plum, and the Wine-sour for sweetmeats ; but the Damson is the best baking Plum.

The Plum is said to succeed best in a lofty exposure, and may yield well in the mountainous parts of the United States ; it yields well near Albany, but the fruit is by no means plentiful in the vicinity of the City of New-York. Like the Nectarine, it is subject to the attacks of the Curculio, and other insects.

It has been observed that Plum trees growing in frequented lanes or barn yards, are more generally fruitful than those cultivated in private gardens, or secluded situations ; this circumstance is by some attributed to the jarring of the trees, by cattle and swine rubbing against them : thus causing the defective fruit to fall on the ground. Geese kept in orchards or fruit gardens, often prove beneficial ; as they, by devouring the defective fruit and other corruptible matter, prevent the possibility of insects getting into the ground, so as to perpetuate their existence, or multiply their species.

Cobbett attributes the scarcity of Plums in New-York to neglect. In his *American Gardener*, paragraph 320, he asks, " how is it that we see so few Plums in America, when the markets are supplied with cart-loads in such a chilly, shady, and blighty country as England ? "

* * * * *

I would answer this query by informing the reader, that the inhabitants of our parent country, with a view to derive the full benefit of the Sun's rays for the cultivation of Plums, Peaches, Nectarines, and such other fruits as require extra heat, train their trees against walls, fences, or trellis-work ; and from their having these means of support, gardeners have no inducement to plant them deeper than is necessary ; whereas, from the circumstance of the American climate being sufficiently warm to ripen those fruits on standard trees, they are generally so cultivated. Many persons, to

save the trouble of staking, or otherwise supporting their trees, plant them too deep, and thus defeat the operations of Nature. That this is a prevalent error, has been shown, page 311 and 319 to 322, to which the reader is referred for a more concise view of the subject.

New varieties of the Plum are produced from seed; and the old kinds are generally propagated by budding on stocks of free-growing Plums, in preference to grafting, because Plum trees are very apt to gum wherever large wounds are made in them. All the sorts produce their fruit on small natural spurs rising at the ends and along the sides of the bearing shoots of one, two, or three years' growth. In most sorts, new fruit branches are two years old before the spurs bear. The same branches and spurs continue fruitful, in proportion to the time which they take to come into bearing.

After the formation of the head is begun, it takes from two to six years before the different sorts come into bearing. Standards must be allowed to expand in free growth, occasionally pruning long ramblers and irregular cross branches. In annual pruning, thin crowded parts, cut away worn out bearers, and all decayed and cankered wood. The Plum may be cultivated in small gardens, trained as espaliers, or to a close fence, like the Apricot, &c.

The tree is of further use than for its fruit as a dessert, &c. the bark dyes yellow; the wood is used by turners; and the dried fruit, or prune, is formed into electuaries and gentle purgatives. Prunes were originally brought from Damascus, whence their name.

SELECT DESCRIPTIVE LIST OF PLUMS.

APRICOT PLUM, *Prune Abricote, Abricotee de Tours.* The fruit is large, its form globular, depressed, divided by a deep suture; whitish yellow, but faint red next the sun, and covered with bloom; its flesh is firm, juicy, sweet, musky and excellent; it ripens in August and September.

BINGHAM. A delicious clingstone plum, of large size and oval form; skin bright yellow, spotted and blotched with red; flesh yellow, rich, and delicious; ripening in September.

BLEECKER'S GAGE. This plum is stated to have been raised by the Rev. Mr. Bleecker, of Albany, from the stone of a German Prune; it is a large globular fruit, of excellent quality; skin dark yellow, with red spots and blotches; the flesh is rich, saccharine, and juicy; in September.

CHICKASAW PLUM. A native species from "Virginia to Carolina." Fruit round; some varieties are red, and some yellow, about the size of cherries. The growth of the tree is different from any other kind of plum, and at a little distance looks somewhat like a Peach tree. It is very ornamental; and Mr. Floy says it would make a fine stock to bud Peaches, Nectarines, or Almonds on, in the Southern States.

COE'S GOLDEN DROP, Coe's Imperial, Bury Seedling, New Golden Drop, Fair's Golden Drop. Raised by Mr. Coe, of Bury, Norfolk, England. The tree is vigorous, fruit oval, of large size; skin greenish yellow, spotted with violet and crimson; flesh gold colour, rich and excellent; the fruit ripens at the end of September, and will keep several weeks. A first-rate fruit, and worthy of general cultivation.

COOPER'S LARGE RED, Cooper's Large American, La Delicieuse. This plum is of extraordinary size, measuring within an eighth of two inches in each direction; the skin is of a fine dark purple colour; the flesh is yellowish green, rich, juicy, and of pleasant flavour; the fruit makes excellent preserves, if gathered in August; its great defect is an inclination to rot.

DIAMOND PLUM. Some consider this as the largest plum known; its colour is a dark purple; in form it resembles the Magnum Bonum, but its flavour is considered rather superior; it ripens in September. The tree, which grows vigorously, originated with Mr. Hooker, Kent, England.

DOWNTON IMPERATRICE. A superior late plum, of medium size, shaped similar to the blue imperatrice; skin dark yellow, and very thin; the flesh yellow, soft, juicy, with a high flavoured acidity; at perfection in October and November.

DUANE'S PURPLE. A very superior plum, of an extraordinary size the form round; the skin a dark purple; flesh sweet and good; ripening in September; named as above from being imported by Mr. Duane of New-York. Its original name lost.

FLUSHING GAGE, Superior Gage. A fine plum, of oval shape and yellow colour, with a whitish bloom; flesh yellow, melting, rich, and separating freely from the stone; ripe towards the end of August.

GERMAN PRUNE, Quetsche, Quetzen. The fruit of the Quetsche plum is grown for the purpose of drying, and is considered the best for use as prunes; fruit below the middle size; of an oval figure; skin red and purple; flesh yellow; juice sweet, with a slight acid; ripe early in September.

GOLIATH, Goliath, St. Cloud. This fruit is very large, sometimes weighing four ounces; the skin is a deep reddish purple; the flesh pale

yellow, firm, and well flavoured, but not rich; the tree is a great bearer, and the fruit much used for cooking; ripe in September.

GREEN GAGE, *Great Queen Claude*, *Dauphine*, *Grosse Reine Claude*, *Abricot Vert*, *Verte Bonne*, *Gros Damas Vert*. A middle sized round fruit, of a yellowish green colour, and purplish russetty red next the sun; the flesh is of a greenish hue, melting, with abundance of very sweet and highly perfumed juice, of an exquisite taste; it arrives at maturity towards the end of August.

HORSE PLUM, *Large Sweet Damson*. Fruit of medium size, oval, with a deep sature in the middle; skin dark red, inclining to purple when ripe; flesh greenish yellow; juice acid, but agreeable. Quantities of these plums are sold in the New-York markets in September and October, for sweetmeats. The trees are generally raised from suckers, and Peaches, Apricots, and Nectarines, will bud and thrive well on such stocks.

HULING'S SUPERB, *Keyser's Plum*. This plum is of monstrous size, and has been known to weigh nearly four ounces; it is of roundish form, and of a greenish yellow colour; the flesh is sweet and excellent. It was raised from seed by Mr. Keyser, of Pennsylvania, and brought into notice by Dr. Wm. Hulings, of that state.

IMPERATRICE, *Imperatrice Violette*, *Blue Imperatrice*. One of the best of late plums; fruit medium size, oval; skin rich, deep purple, covered with bloom; flesh yellowish green, a little firm, very sweet, rich and juicy; the fruit hangs long on the tree, and is at maturity from October to December.

IMPERIAL DIADEM. A large fruit, admirably adapted for culinary purposes; shape oval; colour pale red, but dark when mature; flesh yellow, and separates from the stone, juice plentiful when perfectly ripe; which is early in September; it is of good flavour, and highly perfumed.

ITALIAN DAMASK, *Damas d'Italie*. This fruit is of medium size, nearly round, a little flattened at the base; its colour blue or violet, and covered with a purple bloom; its flesh is yellow, rich and juicy, and the tree, which matures its fruit in August, is very productive.

KIRKE'S PLUM. This variety is said to be as hardy and prolific as the Orleans, as handsome as the Damask, and as good as the Green Gage. Fruit large, roundish; skin covered with a close, firm, azure bloom, through which appears a few golden specks; flesh greenish yellow, firm, juicy and rich; in perfection the early part of September.

LA ROYALE, *Royale*. A large and excellent plum, of a homely dull red colour, but concealed by a thick violet or azure bloom; flesh fine, yellowish green, firm, juicy, high flavoured and delicious; a superior plum; at maturity early in September.

LATE PURPLE DAMSON, *Purple Winter Damson*, *Blue Damascens*, *Blue Damson*. This variety is in great esteem for preserves, and generally commands a high price. It is of a dark purple colour, covered with

bloom; the flesh has rather too much acidity for a table fruit, but this tartness gives it an agreeable flavour when cooked.

LUCOMBE'S NONSUCH. This plum is large, compressed at the summit and base, its breadth is two inches; its colour at maturity, as well as its form, resemble the Green Gage, but more streaked with yellow; flesh firm, rich and juicy; at maturity in August; tree a good bearer.

MIMM'S, Mimm's Plum. The fruit is very large, a little oblong; colour bright purple, covered with thick bloom; its flesh, which separates from the stone, is yellowish green, tender, juicy, and very agreeably flavoured: ripe in September.

MOROCCO, Early Black Damask, Black Morocco, Early Damask, Early Morocco. This is considered as one of the best of early plums. The tree is very hardy and productive; fruit middle sized, roundish; skin deep blackish purple, covered with a light blue bloom; flesh greenish yellow, juicy, rich, and high flavoured: ripe early in August.

NECTARINE PLUM, Caledonian, Howell's Large, Prune Pêche. One of the most beautiful plums known; large, nearly round; the skin at maturity varies from red to crimson, covered with azure bloom; flesh yellowish, coarse grained, astringent; juice abundant, and of mild, pleasant flavour; at maturity in July and early in August.

NEW-YORK PURPLE, Brevoort's Purple Bolmar, Brevoort's Purple Washington. An excellent fruit, raised from a seed of Bolmar's Washington Plum, that had been impregnated with the pollen of the Blue Gage. The fruit is very large; skin brown red, covered with purple bloom; flesh yellow, of a rich and brisk flavour, and adheres to the stone: ripe about the middle of August.

ORLEANS PLUM, Red Damask, Damas Rouge. A well known and productive plum; of medium size, and somewhat oval form; the skin is dark red, approaching to purple, with a thin blue bloom; flesh yellow, firm and good, separating freely from the stone: ripe in August.

PRECOCE DE TOURS, Early Tours. The tree is vigorous and fertile; fruit small, oval, dark purple, covered with fine bloom: flesh greenish yellow, tender juicy, and of very agreeable flavour; one of the best early varieties, and very productive: ripe at the end of July.

PRINCE'S IMPERIAL GAGE, Flushing Gage, Superior Gage. This tree was originated at the Flushing nursery, from a seed of the Green Gage. The fruit is one of the largest of its class; the skin at maturity is yellow, with a whitish bloom; the flesh is rich, luscious and of excellent flavour, and makes fine preserves, if gathered towards the end of August: at maturity in September.

PRUNE SUISSE, Semiana, Prune d'Alessa, Monsieur Tardif Semiana. Fruit very handsome, round, flattened; colour varying from bright amber to deep red, and covered with azure bloom; flesh yellow, crackling and melting; juice very abundant and delicious; an excellent fruit, ripening in September and October, and much cultivated in Massachusetts.

PURPLE GAGE, *Reine Claude Violette, Die Violette, Konigen Claude.*

This fruit is of medium size, almost round, and may be considered as one of the finest varieties; its skin is of violet purple colour, with pale yellow dots, and covered with a light blue bloom; flesh greenish amber, rich, saccharine and high flavoured: at maturity in August, and good until October.

RED DIAPER, *Diapree Rouge, Reche Corbon.* One of the most beautiful plums known; form oval, above medium size; colour bright red, with a partial degree of bloom, and speckled with dots of deeper red; flesh greenish yellow, soft and sweet, separates from the stone; the fruit makes excellent prunes, if gathered early in September, and like the Imperatrice, will hang some time on the tree.

RED MAGNUM BONUM, *Imperial, Imperial Violette, of the French.* A large, oval plum, of deep red colour, covered with blue bloom; the flesh which parts from the stone, is harsh and acid; consequently good for cooking, preserves, &c.: in September and October.

RED PERDRIGON, *Perdrigon Rouge.* An excellent plum, of the first class, of medium size, oval shape, and fine red colour, with gold coloured dots and a fine bloom; flesh bright yellow, transparent, and separates from the stone; juice sweet and delicious; ripe early in September. It makes excellent prunes.

RED QUEEN MOTHER. This plum is of medium size, its colour bright red and yellow, somewhat spotted, and covered with pale bloom; its flesh is yellow, sweet and excellent, ripening early in September. A very productive variety.

ROYAL DE TOURS. The tree is of extraordinary vigorous growth; its principal stem rises vertically; the fruit is globular, of medium size; red violet colour, and covered with azure bloom; flesh yellow, fine, good; juice abundant and sweet: ripens early in August.

SAINT CATHARINE. A medium sized, oblong fruit; skin bright gold colour, spotted with red at maturity, and covered with bloom; flesh yellow, tender, sweet, and fine flavour; ripens early in September, and will hang some time on the tree. A good market plum, for which purpose it is much cultivated.

SURPASSE MONSIEUR. A large fruit, of-oval form, and of a dark red purplish colour, raised by a Mr. Noisette: it is said to be more beautiful and perfumed than the Monsieur, and the tree yields suckers which produce fruit in all their beauty and excellence: in September.

VIRGINALE. This fruit ranks among the best of plums; its shape is round, colour yellowish, touched with violet or rose, and covered with dense bloom; flesh melting, juice abundant, and very agreeable; it adheres to the stone: ripe in September.

WASHINGTON, *New Washington, Bolmar's Washington, Franklin.* A very large, globular plum, inclining to oval; colour greenish yellow, with crimson specks, covered with a rich bloom. This plum has sometimes weighed over four ounces; its flesh is yellow, firm, sweet and delicious; in August. This variety originated in New-York, from

suckers of an old root; the tree of which had been some time previously destroyed by lightning.

WHITE MAGNUM BONUM, Imperiale Blanche, Egg Plum, White Mogul, White Holland. This fruit is of extraordinary size, oval, yellow, covered with pale bloom: the flesh, yellow, firm, acid and austere: excellent for cooking and preserves: in September.

WHITE PERDRIGON, Perdrigon Blanc. A middle sized, oblong fruit, of a pale yellow, with red spots, and covered with white bloom; flesh yellow, rich, saccharine and juicy: it ripens in August and September.

WILMOT'S NEW EARLY ORLEANS, Wilmot's Orleans. This plum is above medium size, of round form; its sature deep; of a dark purplish hue, covered with a fine bloom: the flesh is greenish yellow, of excellent flavour, sweet, combined with a pleasant acid. It is a handsome plum, ripening early in August.

WINESOUR, Rotherham, of the old gardens. This plum is excellent to preserve for sweetmeats: it is of medium size, oblong form, and of dark purple colour: the flesh is yellow, juicy, and of a pleasant acid flavour: the fruit is fit for use early in September: the tree is a great bearer, and will grow on any soil, but flourishes most on limestone or gravel.

QUINCE.

COIGNASSIER. *Cydonia.*

THE Quince is of low growth, much branched, and generally crooked and distorted. The leaves are roundish, or ovate, entire above dusky green, underneath whitish, on short petioles. The flowers are large, white, or pale red, and appear in May and June; the fruit, a pome, varying in shape in the different varieties, globular, oblong, or ovate; it has a peculiar and rather disagreeable smell, and austere taste. The fruit takes its name from being a native of the ancient town of Cydon, in the Island of Crete; some suppose it to be a corruption of *Malus cotonea*, by which the Latins designated the fruit. It is used as a marmalade for flavouring apple pies, and making an excellent sweetmeat; and it has the advantage over many other fruits for keeping, if properly managed.

Of the several sorts, the following are in greatest esteem:

1. The oblong, or Pear Quince, with ovate leaves, and an

oblong fruit lengthened at the base. 2. The Apple Quince, with ovate leaves, and a rounder fruit. 3. The Portugal Quince, the fruit of which is more juicy and less harsh than the preceding, and therefore the most valuable. It is rather a shy bearer, but is highly esteemed, as the pulp has the property of assuming a fine purple tint in the course of being prepared as a marmalade. 4. The mild or eatable Quince, being less austere and astringent than the others.

The Quince produces the finest fruit when planted in a soft moist soil, and rather shady, or at least sheltered situation. It is generally propagated by layers, and also by cuttings, and approved sorts may be perpetuated by grafting. In propagating for stocks, nothing more is necessary than removing the lower shoots from the layer, so as to preserve a clear stem as high as the graft; but for fruit-bearing trees, it is necessary to train the stem to a rod, till it has attained four or five feet in height, and can support itself upright.

When planted in an orchard, the trees may be placed ten or twelve feet apart. The time of planting, the mode of bearing, and all the other particulars of culture, are the same as for the Apple and Pear. The chief pruning they require, is to keep them free from suckers, and cut out decayed wood.

RASPBERRY.

FRAMBOISIER. *Rubus, etc.*

THERE are several species of the *Rubus* found wild in various parts of Asia, Europe, and America, some of which have upright stems, others prostrate; the American Stone Bramble, and also the common Blackberry, Dewberry, Cloudberry, &c. are of this family. The *Rubus idacus*, or common Raspberry, grows spontaneously in the province of New Brunswick, and in various parts of the United States, but most of the cultivated varieties are supposed to have originated in England. Loudon describes the true Rasp-

berry as having stems which are suffrutescent, upright, rising to the height of several feet, and are biennial in duration; but the root is perennial, producing suckers which ripen and drop their leaves one year, and resume their foliage, produce blossom shoots, flower, and fruit, and die the next. The leaves are quinate-pinnate; the flowers come in panicles from the extremity of the present year's shoots; they are white, appear in May and June, and the fruit ripens about a fortnight afterwards."

The fruit is grateful to most palates, as Nature presents it, but sugar improves the flavour; accordingly, it is much esteemed when made into sweetmeats, and for jams, tarts, and sauces. It is fragrant, sub-acid, and cooling; allays heat and thirst. It is much used in distilling. "Raspberry syrup is next to the Strawberry, in dissolving the tartar of the teeth; and as, like that fruit, it does not undergo the acetous fermentation in the stomach, it is recommended to gouty and rheumatic patients."

Nicol enumerates twenty-three species and varieties of the cultivated Raspberry, and twenty-one of the *Rubus ronce*, or Bramble; of the latter, is included the American red and black Raspberry, and the Long Island and Virginian Raspberry. The English varieties are, early Small white; Large white; Large red; most Large red Antwerp; Large yellow Antwerp; Cane, or smooth-stalked; Twice-bearing white; Twice-bearing red; Smooth cane, twice-bearing; Woodward's Raspberry. Prince's catalogue contains twenty-seven names, amongst which are, Brentford red; Brentford white; Flesh-coloured; Barnet red, fine; Pennsylvania; Cretan red; Prolific red; Canada purple rose-flowering, &c.

The varieties can be perpetuated by young sucker shoots, rising plenteously from the root in Spring and Summer; when these have completed one season's growth, they are proper to detach with roots for planting, either in the Autumn of the same year, or the next Spring, in March or early in April. These new plants will bear some fruit the first year, and furnish a succession of strong bottom shoots for full bearing the second season. New varieties are raised from seed, and they come into bearing the second year.

Raspberry beds are in their prime about the third and fourth year ; and, if well managed, continue in perfection five or six years, after which they are apt to decline in growth, and the fruit to become small, so that a successive plantation should be provided in time. Select new plants from vigorous stools in full perfection as to bearing. Be careful to favour the twice bearers with a good mellow soil, in a sheltered situation, in order that the second crop may come to perfection.

When Raspberries are cultivated on a large scale, it is best to plant them in beds by themselves, in rows from three to five feet apart, according to the kinds. In small gardens, they may be planted in detached stools, or in single rows, in different parts of the garden, from the most sunny to the most shady aspect, for early and late fruit of improved growth and flavour. It is requisite to cut out the dead stems early in the Spring, and to thin and regulate the successional young shoots ; at the same time, the shoots retained should be pruned at the top, below the weak bending part, and some rotten dung worked in, around the roots of the plants. Keep them clear of weeds during the Summer, by hoeing between the rows ; at the same time eradicate all superfluous suckers, but be careful to retain enough for stock in succeeding years.

STRAWBERRY.

FRAISIER. *Fragaria.*

This is a genus of fruit-bearing herbaceous plants, of which there are few in the vegetable kingdom that can equal the Strawberry in wholesomeness and excellence. The fruit is supposed to receive its name from the ancient practice of laying straw between the rows, which keeps the ground moist and the fruit clean. They are natives of temperate, or cold climates, as of Europe and America. The fruit, though termed a berry, is, in correct botanical language, a fleshy receptacle, studded with seeds. It is univer-

sally grateful alone, or with sugar, cream, or wine, and has the property, so valuable for acid stomachs, of not undergoing the acetous fermentation. Physicians concur in placing Strawberries in their small catalogue of pleasant remedies ; as having properties which render them, in most conditions of the animal frame, positively salutary ; they dissolve the tartareous incrustations of the teeth ; they promote perspiration. Persons afflicted with the gout, have found relief from using them very largely ; so have patients in case of the stone ; and Hoffman states, that he has known consumptive people cured by them. The bark of the root is astringent."

In cultivating the Strawberry, an open situation and rich loamy soil, rather strong, is required for most varieties ; and from their large mass of foliage and flowers, they must, till the fruit is set, have copious supplies of water. The row culture is best calculated to produce fruit ; and frequent renewal insures vigorous plants, as well as large fruit. Some make beds of single rows, from twelve to eighteen inches apart, according to the sorts ; others form a bed with two rows eighteen inches asunder. If several beds be intended, a space of two feet may be left between each bed as a path ; and in the second or third season, the paths may be manured and dug, to admit of the runners taking root ; by this means, a renewal may be made so often, and the old stools being taken away, leaves spaces between the beds as before. Or, new plantations may be made every season ; because after the roots are fairly established, they multiply spontaneously, as well by suckers from the parent stem, as by the numerous runners ; all of which, rooting and forming a plant at every joint, require only removal to a spot where there is room for them to flourish. If taken off, and planted in rows in August and September, they will produce fine fruit the following season, and will bear in full perfection the second Summer ; some, however, prefer Spring planting, which answers very well, if done in damp weather.

A plantation of the Alpine yields fruit the same year that it is made. The Wood and the Alpine come regularly

from seed, from which finer fruit may be produced than from offsets. The other species are uniformly propagated by offsets, except the intention be to try for new varieties. The Alpine and Wood species may be planted in situations rather cool and shady, in order that they may produce their fruit late in the season, which is desirable. The Strawberry, with a little trouble of choosing a succession of sorts, may be forced so as to be had at the dessert every month in the year; though, during the Winter months, they have not much flavour.

Some gardeners lay straw an inch or two thick over their beds in March, and set fire to it, in order to promote a stocky growth of plants and early fruit; others recommend mowing off the tops of such as are not required to fruit early, while they are in blossom, with a view to obtain a crop of Strawberries late in the season.

The London Horticultural Catalogue contains the names of one hundred and twenty-one varieties of all the species; which are classed according to their nature, colour, &c. Class 1. Scarlet Strawberries; 2. Black Strawberries; 3. Pine Strawberries; 4. Chili Strawberries; 5. Hautbois Strawberries; 6. Green Strawberries; 7. Alpine and Wood Strawberries. To select all the most esteemed from this, or any other extensive catalogue, is a difficult task; the following description of species and varieties may serve to direct the choice:

The Wood Strawberry, *Fragaria vesca*, with oval serrated leaves: the fruit red, white, and green, which is round and small. A native of Britain.

The Scarlet, *Fragaria Virginiana*, with leaves like the preceding: the fruit roundish and scarlet-coloured. A native of Virginia. Varieties—Methven Scarlet, Knight's Scarlet, Austrian Scarlet, Early Scarlet, Wilmot's late, Common late, Wilmot's Early Scarlet, &c.

The Roseberry, *Fragaria Virg. var.* An Aberdeen seedling, introduced in 1810. The plants have few roundish leaves, larger fruit than the scarlet, and are very prolific: continues bearing till August.

The Black var. Downton, Dark Scarlet Strawberry, originated by Mr. Knight. The fruit is large, irregular, and cockscomb-like: plant hardy and prolific.

The Carolina, *Fragaria Carolinensis*, colour dark red: a native for

America. There are several choice varieties of this fruit as—Elton's Seedling, Keen's Seedling, Mulberry, Wilmot's Black Imperial, Blood Pine, North's Seedling, Knevet's Seedling, &c.

The Musky, or Hautbois, *Fragaria elatier*, with oval rough javelin-edged leaves. A native of Britain. Varieties—Black Hautbois, Globe Hautbois, Double or Twice Bearing, producing delicious fruit in Spring and Autumn.

The Chili, *Fragaria Chiliensis*, with large, oval, thick, hairy leaves, and large flowers: the fruit large and very firm: a native of South America. Wilmot's Superb, or Large Cockscomb Scarlet, and Greenwell's New Giant, are highly esteemed varieties.

Keen's Imperial, or New Chili, *Fragaria Chili. var.* raised by Mr. Keen, of Isleworth, a most excellent bearer, ripening early. The fruit is very large: the flesh firm and solid, without any separable core: colour scarlet.

The Alpine, or Prolific, *Fragaria collina*, commonly lasts from June till November, and in mild seasons, till near Christmas: the varieties of this fruit are red and white. Natives of the Alps of Europe.

The one-leaved, *Fragaria monophylla*, the pulp of the fruit, pink-coloured. A native of South America.

The Grove End Scarlet Strawberry, a seedling raised by Wm. Atkinson, Esq. in his garden at Grove End, Marylebone, in the year 1820; an excellent bearer, ripening its berries early and in succession.

All the species and varieties of this fruit are highly estimated in Britain, where they are cultivated in great perfection. Berries have been known to weigh from one to two ounces, which have been grown to the circumference of eight inches and upwards. It may be gratifying to the lovers of this excellent fruit, to be informed that some of the best kinds are attainable here. Messrs. Prince & Sons, and Mr. Floy, have some of the choicest kinds in their nurseries; and one of our patriotic fellow-citizens, the late Jesse Buel, Esq., of Albany, informed us in the Albany Argus, of June 23, 1830, that he had grown the Downton, (a variety of the Chili, crossed by Mr. Knight,) two years in succession, 4½ inches in circumference.—He said, that "he picked a pailful that morning of the Methven Scarlet Strawberry, which had an average circumference of three inches each. Several measured four inches, and one four and a quarter inches. Sixty-three, divested of the calyx, weighed a pound, which is a trifle more than four to the ounce." Several of the choicest kinds have been lately transplanted from the London Society's Garden into the American Nurseries.

WALNUT.

NOYER. *Juglans.*

FROM the circumstance of our having an abundance of the fruit, from the many species of this genus of trees growing spontaneously around us, it is presumed that the culture of the *Juglans regia*, commonly called English Walnut, or Madeira Nut, has been neglected by many of our citizens. It is a native of Persia, and is cultivated in France, England, and in other parts of Europe, both as a fruit and timber tree. The fruit in England is much used in a green state for pickling, and also as an adulteration of soy sauce. In France, an oil which supplies the place of that of Almonds, is made from the kernel. In Spain, they strew the gratings of old and hard nuts, first peeled, into their tarts and other meats. The leaves strewed on the ground, and left there, annoy worms or moles, or macerated in warm water, afford a liquor which will destroy them. The unripe fruit is used in medicine for the purpose of destroying worms in the human body. Pliny says, "the more Walnuts one eats, with the more ease will he drive worms out of the stomach."

The timber is considered lighter, in proportion to its strength and elasticity, than any other, and therefore commonly used in England for gun stocks. It is used in cabinet work in most parts of Europe; the young timber is allowed to make the finest coloured work, but the old to be finest variegated for ornament. When propagated for timber, the nut is sown; but when fruit is the object, inarching from the branches of fruit-bearing trees, is preferable. Budding is also practised by some; the buds succeed best when taken from the base of the annual shoots; ordinary sized buds from the upper part of such shoots generally fail.

Walnut trees that have not been grafted or budded, may be induced to produce blossoms by ringing the bark, that is, cutting out a streak of the bark around the body or main branches of the tree. Walnut trees seldom yield much fruit until fifteen or twenty years old; it is produced on the

extremities of the preceding year's shoots. The trees should stand forty or fifty feet apart, and they may be permitted to branch out in their natural order. They need but little pruning, merely to regulate any casual disorderly growth, to reduce over-extending branches, and to prune up the low stragglers.

Lest any of our native Walnuts should be neglected or abandoned by any, I annex a description of the different kinds :

Juglans catharticus, is known under the name of Butternut, Oilnut, and white Walnut ; these nuts are used by the Indians as a medicine.

Juglans nigra, the black Walnut, is a tree of large size ; its fruit is known to be excellent.

Juglans olivæformis, Pecan, or Illinois nut, is delicious. The nuts of *Juglans sulcata*, which is called thick shell bark, Hickory, and Springfield, and Gloucester nut, are large and well-tasted. The shell bark Hickory, shag bark, or scaly bark Hickory, *Juglans alba*, is so called on account of its bark, which is torn lengthwise in long loose strips, as in *J. sulcata*. The *Juglans tormentosa*, the Mucker nut, white heart Hickory, or common Hickory, and most of the other kinds enumerated, are worth preserving ; or cultivating where there is none, for its timber for mechanical purposes ; and that of the *Juglans glabra*, or Hog nut, is useful for brooms, &c.

OBSERVATIONS ON THE WEATHER,

AS INFLUENCED BY

CHANGES OF THE MOON.

LEST the reader should judge, from my introducing this subject, that I am an advocate for Moon-planting, in any other sense than in ascribing the various changes of the weather to the influence of that great luminary, I would here offer a few observations in reference to the practice and prejudices of many persons in choosing the first quarter of the Moon for planting such vegetables as yield their produce above the surface, as Cabbage, &c. and the last quarter or wane of the Moon for such as grow and yield their produce chiefly in the earth, and below the surface, as Potatoes, &c.

I would first observe, that if the Moon has any direct influence over vegetable productions, it must operate in many cases quite the reverse to what these theorists generally aim at; for instance, if the earth and weather should happen to be dry in the first week after planting certain species of seed, such would fail to germinate for want of its most essential aliment, *moisture*; and in consequence of such seeds laying dormant in the earth, until after another change of the Moon, if that luminary influences the seed at all, in such case it must be contrary to the objects of the honest planter.

As I deem this argument alone sufficient to shake the foundation of Moon-planting, in the sense I have described, I shall at once submit to the reader's attention, the following observations, and table, from the pen of the justly celebrated Dr. Adam Clarke. Some exceptions, however, may be taken to his rules, with regard to the wind, which does not operate in all places alike. For example, in rainy seasons with us, the wind is generally East, North-East or South-East, and cold weather comes by a North-West wind. In England, where these calculations were made, it is in some respects different.

"From my earliest childhood I was bred up on a little farm which I was taught to care for and cultivate ever since I was able to spring the rattle, use the whip, manage the sickle, or handle the spade, and as I found that much of our success depended on a proper knowledge and management of the weather, I was led to study it ever since I was eight years of age. I believe meteorology is a natural science, and one of the first that is studied; and that every child in the country makes untaught, some progress in it; at least, so it was with me. I had actually learned, by silent observation, to form good conjectures concerning the coming weather, and on this head, to teach wisdom to those who were perfect, especially among those who had not been obliged, like me, to watch earnestly; that what was so necessary to the *family support* should not be spoiled by the weather before it was housed.

Many a time, even in tender youth, have I watched the heavens with anxiety, examined the different appearances of the morning and evening Sun, the phases of the Moon, the scintillation of the stars, the course and colour of the clouds, the flight of the crow and swallow, the gambols of the colt, the fluttering of the ducks, and the loud screams of the seamew—not forgetting the hue and croaking of the frogs. From the little knowledge I had derived from close observation, I often ventured to direct our agricultural operations in reference to the coming days, and was seldom much mistaken in my reckoning.

About twenty years ago, a table purporting to be the work of the late Dr. Herschel, was variously published, professing to perform prognostics of the weather, by the times of change, full and quarters of the moon. I have carefully consulted this table for years, and was amazed at its general accuracy; for though long as you have seen, engaged in the study of the weather, I never thought that any rules could be devised, liable to so few exceptions. I have made a little alteration in the arrangements, illustrated it with further observations, and have sent it to you that you may insert it, as it has hitherto been confined generally to a few almanacs."

A TABLE.

For telling the Weather through all the Lunations of each year, for ever.

This table and the accompanying remarks are the result of many years' actual observation; the whole being constructed on a due consideration of the attraction of the sun and moon, in their several positions respecting the earth, and will by simple inspection, show the observer what kind of weather will most probably follow the entrance of the moon into any of its quarters, and that so near the truth as to be seldom or never found to fail.

MOON.	TIME OF CHANGE.	IN SUMMER.	IN WINTER.
If the New Moon—the first Quarter—the full Moon, or the Last Quarter happens.	Between Midnight and two in the morning.	Fair.	Hard Frost, unless the wind be South or West.
	2 and 4 morning.	Cold with frequent showers.	Snow and stormy.
	4 and 6	Rain.	Rain.
	6 and 8	Wind and Rain.	Stormy.
	8 and 10	Changeable.	Cold rain, if wind be West.
	10 and 12	Frequent showers.	Snow, if East.
	At 12 o'clock at noon, and 2 P. M.	Very Rainy.	Snow or Rain.
	Between 2 and 4 P. M.	Changeable.	Fair and mild.
	4 and 6	Fair.	Fair.
	6 and 8	Fair if wind N. W. } Rainy if S. or S. W. }	Fair and Frosty, if wind N. or N. E. Rain or Snow, if S. or S. W.
	8 and 10	Ditto.	Ditto.
	10 and midnight.	Fair.	Fair and Frosty.

Observations. 1. The nearer the times of the Moon's Change, First Quarter, Full and Last Quarter, are to midnight, the fairer will the weather be during the seven days following.

2. The space of this calculation occupies from ten at night till two next morning.

3. The nearer to mid-day or noon the phases of the Moon happen, the more foul or wet weather may be expected during the next seven days.

4. The space for this calculation occupies from ten in the forenoon to two in the afternoon. These observations refer principally to the Summer, though they affect Spring and Autumn nearly in the same ratio.

5. The Moon's Changes—First Quarter—Full, and Last Quarter, happening during six of the afternoon hours, i.e., from four to ten, may be followed by fair weather; but this is mostly dependant on the wind, as is noted in table.

6. Though the weather, from a variety of irregular causes, is more uncertain in the latter part of Autumn, the whole of Winter, and beginning of Spring; yet in the main, the above observations will apply to those periods also.

INTRODUCTION

TO THE

MONTHLY CALENDAR.

THE object of this Calendar is to furnish in a condensed form, monthly directions for the culture of some plants not previously mentioned in this work ; and also to direct the reader's attention to the regular management of such plants as have been heretofore treated of. In pursuit of the latter object, references will be made to former pages, so as to exhibit, at one view, the business of the garden in each month of the year. The figures refer to the pages in which further directions may be found relative to the operations adverted to.

In page 23 it has been shown, that the directions accompanying our catalogue may be applied to all the varied climates of the United States, by a *minute observance* of the difference of temperature.

It may be here observed, that the soil is susceptible of cultivation three months earlier in the remotest South, than in the coldest part of our Northern territory ; the calendar therefore for March, may be applied to the middle of January in the warmest climates, and to the middle of April in the coldest ; some exceptions to this rule must, however, be taken in the Southern States after the three Spring months, for the following reasons :

1. As warm weather South is of longer continuance than in the North, plantations of those species of vegetables denominated tender in page 19, may be made in the open garden from March to August.

2. Extreme heat being detrimental to the cultivation of many half-hardy vegetables, such as Broccoli, Cauliflower, Cabbage, Celery, Lettuce, Radish, Turnips, &c., these can only be cultivated perfect in Spring and Autumn; the latter crops, therefore, should not be planted until August or September; see note to article Broccoli 41, also 57, 62 and 92.

3. Many of the half-hardy class, as also those designated *hardy* in our table, may be cultivated throughout the Winter months, by forwarding such as are required for early Spring use, after the Summer crops are taken off. See table, explication, &c., page 19 to 22, also page 103.

In the Eastern, Western and Middle States, the annexed calendar will answer in the order it stands, by applying directions to the beginning of the first Spring month, in the warmest climates, and to the latter end, in the coldest climates, bearing in mind that where Summer is short, the main crops must follow the early, in quick succession, with a view to their maturity before Winter.



MONTHLY CALENDAR.

JANUARY.

"Prognostics foretoken most truly some things,
Of Summers, and Autumns, and Winters, and Springs;
By them from the *past* we may all ascertain
The *future*, respecting the winds and the rain."

VEGETABLE DEPARTMENT.

It is customary at this season of the year, with all prudent men to look around them, and endeavour to ascertain the results of their industry throughout the past year, in order to make improved arrangements for the future. The mere gardener, having no complicated accounts to adjust, may

occupy his time to valuable purposes. If he be not a book-reader, he should be a book-keeper; (see page 8,) and he should frequently take a survey of his former practices and those of his acquaintances, with a view to improve on every thing he has done, or seen done. If he consults writers on Horticulture, he should do as the author has endeavoured to do in preparing this work for the press; not adopt the mere theory of a subject, nor indulge in speculative ideas, nor even tread in the steps of others, but endeavour to erect his edifice of knowledge upon a good settled foundation. In all his pursuits, whether he attempts to follow the example of practical and exemplary men, hear lectures, or consult any authors on the subject, he should do as every sensible man does at his daily meals, take that which suits him best, and leave the residue for others. If this work should be considered worth an annual perusal, he may read the general remarks in this month, (January,) and make a memorandum of such things as may be obtained at a leisure time, in preference to driving it off till it is wanted. I shall endeavour to make my Calendar serve as an index to the book, and in pursuit of my object, shall begin at page 1 of the general remarks, which suggests, that if a man has a garden to form, he will require fencing materials. If these should be already at hand, every gardener should provide manures, ingredients for the destruction of insects, drilling machines, and other tools; poles or rods for the support of such Beans, Peas, or other climbing plants which he may intend to cultivate; and if he intend to use hot-beds, or forcing frames, he should make arrangements to get compost and heating materials, in time for the work to be performed in the next month. If he depends on this book for information, he may read the general remarks from page 7 to 23, and also from pages 101 to 120, on Forcing Vegetables.

FLOWER DEPARTMENT.

Having shown in page 217, that Heat, Air, and Water, are the food of plants, and necessary to the preservation of their health and life, if given in due proportion according

to circumstances, I would, at this season of the year, especially, salute the gardener with a "be ye temperate in all things."

Temperance in the use of water, is of the utmost importance in the Winter season, for several reasons which may be given. In the first place, water will attract frost, and, therefore, should be used very sparingly in frosty weather; another consideration is, that in the absence of heat and air, plants cannot absorb much moisture, and consequently must become injured from excessive watering; and it may be observed further, that it is not prudent to keep plants in an extremely vigorous state, until the season arrives when the external air is soft and salubrious; they can then have a due proportion of heat, air, and moisture at the same time.

Perhaps the next important point to be attended to at this time is, to see that the greenhouse, or room, in which plants are intended to be preserved, is calculated for the purpose. The room should be light and airy, and yet so secure as to prevent the intrusion of external cold air, or the departure of warm air in the night season.

A Fahrenheit thermometer is indispensable in a greenhouse, or room, where plants are kept, and the temperature should be always up as nearly as possible to 40 degrees, in the absence of the Sun. If the gardener retire to rest in this variable climate, leaving the mercury much below 40, he may expect to find his plants frozen in the morning.

A good brick flue is better calculated for heating a small greenhouse, than any other method; because after a sufficient fire has been made to heat the bricks thoroughly, they will retain the heat through a Winter night, whereas an iron stove with its metal pipes will cool as the fire gets low, and expose the plants to cold, towards morning, which is the time they most need protection. The heat from iron is moreover too dry and parching, while an evaporation or salubrious steam may be raised from bricks, by sprinkling the flue occasionally, which would operate on the plants similar to healthful dew drops.

At this season of the year especially, sitting-rooms, or parlours, are heated in the daytime to full 20 degrees.

higher than what is necessary for the preservation of plants; consequently, as the heat decreases in the night season, plants often get injured, unless a fire is kept up. Air must be admitted to plants kept in this way, at all opportunities; and more water will be necessary for such plants, than those kept in a greenhouse would require. For the management of bulbous roots, in pots or glasses, the reader is referred to page 212.

FEBRUARY.

"A cold sour Autumn, they sternly maintain,
A long severe Winter will bring in its train;
If Summer and Autumn be both dry and warm,
Calm opens the Winter,—it closes in storm."

VEGETABLE DEPARTMENT.

Although stern Winter, with its ice-bound chains, exerts its influence over the soil, the gardener may find employment preparatory to commencing his operations of ploughing and planting, as the year progresses. Perhaps the most important business at this season, is to collect plenty of manure; next to this, the gardener, who intends to raise early plants for forcing or otherwise, should see that his hot-bed frames are in good repair and ready for use; he should also repair his sashes, and make straw mats to cover them with. In preparing dung or other heating materials for hot-beds, or forcing pits, let it be kept secure from heavy falls of snow or rain, and frequently turned over preparatory to its being made into a bed.

Previous to making hot-beds, select a situation that is well protected by a close fence or wall, and not in any way connected with any building calculated to harbour rats, mice, moles, &c., which are very apt to take up their abode in warm dung, to the great injury and sometimes the destruction of the beds. It is necessary that the foundation for the beds be drily situated, and not liable to be inundated with water from melted snow, &c. When all is prepared as directed, page 101 to 106, begin to sow Cabbage,

Egg-plant, Lettuce, and Tomato seed, 101; force Asparagus, 105; Kidney Beans, 107; Cucumbers, 109; plant Peas, 120; Potatoes, 121; sow Radish seed, 121. In cold beds well protected, plant Broad Beans, 107; sow Cabbage seed, 45.

After the seeds are sown, the beds will require constant attention; cover up well in cold nights, and give air at all opportunities, taking care to regulate the heat in the beds, as directed under the different heads, from page 102 to 125. If the heat be excessive, it must be decreased as directed, page 105, and if it should become necessary to let off steam in cold weather, care must be taken to cover the apertures sufficiently to keep out frosty air. Give air at all opportunities to Cabbage, Cauliflower, Lettuce, and such other plants as may be in frames, of last year's sowing.

FLOWER DEPARTMENT.

Having in the previous month discussed some important points relative to the general care of plants, I now proceed to notice a few of those kinds that require attention at this particular season:

Camellias, or Japan Roses.—There are numerous varieties of this valuable class of plants, exhibiting every shade in succession, from deep crimson to the purest white; in some imperceptibly blended, in others strikingly contrasted. They are unrivalled objects of beauty from October to May, being set in a foliage of fine glossy verdure.

Double Camellias are generally propagated on stocks of the single, which are procured by planting cuttings of the young shoots in light mould under bell glasses; on these, when grown to a sufficient size, are inarched the finer kinds of double. Sometimes these latter are also struck by cuttings; but as their progress by such method is generally slow and uncertain, it is seldom resorted to. These valuable plants are too often injured by amateurs, from misapplied care bestowed upon them, so that their whole compensation and enjoyment is reduced to the mere possession of a handsome green shrub. Destined from the extreme beauty and unrivalled delicacy of their flowers to become the chief pride

and ornament of the greenhouse and drawing-room in the Winter season, the Camellias should have a fair chance given them to exhibit their fine bloom in perfection.

It should be observed, that Camellias are by no means tender shrubs, but require to be kept in a medium even temperature, and they generally succeed best in a greenhouse, where the atmosphere is damp. As the buds begin to swell, they will require more water than at any other time, which may be applied from the rose of a watering pot, or syringe, while in bud, but when in blossom it should be applied to the earth.

If Camellias be kept where there is a dry air, occasioned from fire heat, they must have plenty of the natural air at all opportunities, or the buds will become brown and fall off; and if they are subjected to extreme cold at night, which is too frequently the case, when kept in rooms of an uneven temperature, premature decay of the buds will inevitably be the consequence.

To preserve Camellias in healthy condition, they should be kept in fresh, moderately light soil, consisting of sandy loam taken from under grass sods, and leaf mould well mixed; nothing being more injurious to them than overpotting; they should not be shifted into larger pots, until the projection of the roots show evidently that they are in need of it. Few plants bear privation of sunshine in Summer better than these; they should, however, be kept in an open situation, where they can have a full share of light and air.

Such bulbous roots as may be in progress of blooming, will require attention this month; turn them frequently to the light, as recommended in page 212, and increase the supplies of water as they advance towards perfection.

Attend to *Campanula Pyramidalis*, *Hepeticas*, *Mimulus*, *Senecios*, and herbaceous plants in general; those not in bud should be watered very sparingly. Shrubby plants, especially those which bud and blossom in the Winter, and early part of, the Spring, as the several varieties of *Acacias*, *Azeleas*, *Calceolarias*, *Correas*, *Coronillas*, *Daphnes*, *Diosmas*, *Eupatoriums*, *Eutaxias*, *Fuchsias*, *Gnidas*,

Heaths, Laurustinases, Lemon Trees, Rhododendrons, Orange trees, &c., will require water once or twice a week, according to circumstances, and air should be given at all opportunities, or the plants will not blossom in perfection.

For the benefit of such as may wish to raise early plants from seed, or to force Dahlia or other roots, I subjoin the following brief directions for making a small hot-bed : In a border exposed to the morning sun, let a pit be dug about thirty inches deep, five feet wide, and six long ; this will admit of two sashes, each three feet by five. A frame of suitable dimensions may be made of plank ; the back plank may be two feet wide, and the end ones sloped so as to make a fifteen inch plank do for the front. The frame being made, set it over the pit, and then get a load of horse dung, fresh from the livery stables, (not such as has lain long, or may have been soddened with water,) spread the dung evenly in the pit until full, then put into the frame light rich mould, or compost, to the depth of ten or twelve inches, and the seed may be sown as soon as it gets warm. It may be necessary to observe, that in making hot-beds, the quantity of top mould should be regulated according to the substance of manure in the pit, and this may vary according to the use the beds are intended for, or to other circumstances. After the seeds are sown, the beds will require constant attention ; cover up warm in cold nights, and give air at all opportunities, to prevent the plants from growing weak.

As we are subject to North-West winds at this season, which produce extreme freezing, it will be better to delay the making of hot-beds to the first week in March, at which time opportunities will frequently offer of giving plants a tolerable share of salubrious air, which is indispensable to their preservation.

FRUIT DEPARTMENT.

With a view to give all attention to culture as the season advances, the gardener should look over his hardy fruit trees, and hardy vines, and commence pruning them, by cutting

off all dead and superfluous branches; he may also clean trees from moss and canker, and search for the nests of insects, with a view to destroy them while in a torpid state, to prevent their spreading, 246. If he has trellises, or any implements of husbandry out of repair, he should embrace the most favourable opportunities of putting them in good condition, and of repairing his fences, &c.

The latter end of this month is a good time to prune grape vines, 252.

Provide shreds or strips of woollen cloth about half an inch wide, or list from broad cloth, which is still better, also small sharp pointed lath nails to use in training fruit trees, &c., next month.

If any removals are contemplated, or fresh trees, vines, or shrubs required, they should be planted as soon as the ground can be brought into good condition. 241. 311. 319 and 367-

MARCH.

"If the Sun appear dim, surrounded with haze,
And his disk ill defined, and faded his rays:—
If white at his setting—of power if shorn,
The signs are all certain, there'll soon be a storm."

VEGETABLE DEPARTMENT.

This month affords considerable employment to an industrious gardener. Manure may be drawn on the ground and distributed in heaps, ready to spread, see page 17; and the hot-beds and forcing frames will require constant attention. Cover up warm in cold nights, and give additional air as the season progresses, to prevent the plants growing weak, taking care to regulate the heat as directed for the different kinds of vegetables. If any additional frames are to be put down this month, either for forcing or forwarding vegetables, they should be attended to in time, as directed. Begin the work of the Kitchen garden as soon as the earth can

be brought into good condition, and transplant hardy Lettuce plants, 62; dress Artichoke beds, 26; Asparagus, 30; Rhubarb, 79; Sea-Kale, 83; and prepare to make new plantations of these vegetables. Plant Broad Beans, 31; and 107; Rape, 39; plant Cauliflower plants under hand glasses, 43 and 108; sow Cabbage seed, 46 and 101; Carrot, 49; Celery, 51; plant Chives, 56; Cucumber, 109; sow Egg-plant seed, 57; plant Horse Radish 59; Leek, 61; Lettuce, 62; plant Melon seed, 119; sow Onion, 67; Parsley, 69; Parsnip, 70; Pepper, 71; plant Peas, 72; Potatoes, 121; sow Radish seed, 77 and 121; plant Rocambole, 77; Rhubarb, 78; Salsify, 80; Scorzonera, 81; Sea Kale, 82; Skirret, 84; sow Spinach seed, 86; Tomatoe, 88 and 123; Turnip-seed, 91; prepare to make Hop plantations, 126; Herbs, 94 to 96. Plant esculents for seed, beginning with the hardiest kinds; raise up and plant Cabbage stumps, &c. to produce greens early for the table. In the course of this month every thing should be forwarded relative to the cultivation and preparation of the ground, by levelling such as may have lain in ridges through the Winter, and by manuring and digging the soil generally, preparatory to sowing and planting it early in next Month.

FLOWER DEPARTMENT.

As the Spring progresses, the external air will be soft and salubrious; at which time it should be freely admitted, to plants kept in rooms and greenhouses. In proportion as the plants get air, they should have water applied from the rose of a watering pot.

Monthly Roses will, require attention this month. It should be recollected, that it is from the young wood of these plants that buds are to be expected; their growth should, therefore, be encouraged, by admitting sun and air at all opportunities, and water when necessary.

Primulas.—There are several species of plants under this name, which exhibit their blossoms in March and April; some of which are very beautiful, as the Polyanthus, English Spring Flowers, Auricula, &c.; but I would now

direct the reader's attention to the Chinese varieties, some of which are pure white, and others of a lilac colour. They are first raised from seed sown in the Spring, and will keep two or three years.

Plants that are full grown, will commence blooming in December, and continue to produce umbels of flowers for five or six months, if well attended to; they are generally in their prime this month, at which time a little water should be applied to the earth about twice a week.

Many species and varieties of seeds may be sown this month in hot beds, prepared as directed under the head February. 362.

Auricula, Polyanthus, and all other species of *Primula* seed, should now be sown. Mignonette, Ten Week Stock, and Dahlia seed, from choice varieties, may also be sown in pots, and care should be taken when the plants are up, that they be not injured by excess of moisture. 220.

There are some splendid varieties of the *Schizanthus* which deserve attention at an early season. They are rather difficult of cultivation in pots, being apt to suffer by excess of heat or moisture; and often, when in full bloom, die off suddenly by decays at the base of the stem. No plants will, however, more amply repay all the care and trouble that may be bestowed on them, than those of the elegant genus *Schizanthus*. The best soil for them is loam, and leaf mould, with a small portion of sand. They should be repotted as often as the pots are filled with roots, till they come into full flower.

All the different varieties of tender annual, biennial, and perennial flower seeds, designated thus § and thus † in our catalogues, pages 136 and 147, may be sown this month in hot-beds, or in pots kept in the greenhouse.

Hyacinths, Narcissus, and other bulbs in glasses, must have the water shifted every week, and the glasses should be thoroughly washed every two or three weeks, 213

Towards the end of the month, roots of *Amaryllis formosissima*, *Gladiolus psitacina*, Tiger flowers, Tuberoses, and such other bulbs as may have been preserved dry through the winter, may now be planted in pots and kept

in a greenhouse or light room, or else plunged in a hot bed.—Those who have no such conveniences may, however, delay the planting of sound bulbs, until the weather will admit of their being planted in warm borders.

Dahlia roots should now be plunged in a hot-bed, to forward them, with a view to their being separated, as soon as the eyes are discernible, 196.

FRUIT DEPARTMENT.

If the weather be mild this month, considerable work may be done in the fruit garden and orchard, before the ground can be brought into suitable condition for ploughing, digging, or planting.

Prune Grape Vines ; but withhold the knife, until you have surveyed the plant, and selected a full supply of the last Summer shoots at regular distances from each other, for bearers the coming Summer ; cut out the superabundant, with part of most of the last year's bearers, and naked wood. Prune so that a young shoot terminate each branch, and shorten the reserved shoots ; the smallest to three or four joints, and the strong ones to ten or twelve. Fasten the vines to trellises as soon as pruned, with list, or shreds of woollen cloth, arranging the general branches from ten to twelve inches distance, more or less, according to the size of the vines and space allotted for them to grow.—See Observations on Training and Pruning, page 251 ; also, article Grape Vine, 293 to 306.

Prune Apple trees, 265 ; Cherry, 277 ; Pear, 329 ; Plum 338 ; Quince, 344 ; also, Currant bushes, 264 ; Gooseberry, 292 ; cutting out all crowded branches, worn out bearers and decayed wood.

Cut out and destroy all the old stems of Raspberry shrubs, reserve three or four of the strongest young shoots on each stool ; shorten them at the top, and take away all others, the strongest of which may be transplanted to form a new bed, 346

In transplanting trees care should be taken that the collar, or that part from which emanates the main roots, be not

inserted too deep in the soil, as this injures the bark, and consequently impedes the natural circulation of the juices. A medium sized tree may be planted one inch deeper than it was in the nursery bed, and the largest should not exceed two or three inches. 241. 311. 319. 337.

Plant cuttings and suckers of Gooseberries and Currants; also, of such fruit trees as produce them, in order to raise stocks to bud and graft upon; fruit stones and kernels may be also sown for the same purpose.

Young trees, shrubs, and vines may be obtained at public nurseries, in different stages of growth, suited for general planting; and others sufficiently advanced for immediate bearers; these should be carefully taken up, and replanted. For full information on this subject, the reader is referred to the article "on the choice of fruit trees in the nursery," 259.

APRIL.

"The state of the *wind* augurs rain, as they say;—
When restless in changes, now this, now that way,
Or hollow, comes whistling plaintively by,
The rain it betokens is probably nigh."

VEGETABLE DEPARTMENT.

This is certainly the most important month in the year for gardening operations. Finish as early as possible the planting of esculents for seed, and see that all plants of the same genus are remote from each other, or they will adulterate. All the soil of a garden should be dug or ploughed this month if possible, and some of the early crops sown last month will require hoeing and weeding.

Great care should be taken to have good sound seeds, as this is a matter of the utmost importance, and for want of which, many are disappointed in their principal crops when too late to sow again. It is also a material consideration to have the best varieties both of seeds and plants of the respective kinds. See pages 17 and 18.

If not done last month, make plantations of Artichokes, 24; Asparagus, 27; Beans, *vicia faba*, 31; towards the end of the month, plant Beans, *Phaseolus*, 33 and 34; plant Beet seed, 36; sow late kinds of Broccoli seed, 40; not Cape Broccoli until May; seed of Cabbage for Summer use, 46; Cardoon, 48; plant Carrot, 49; Celery, 50; sow Cress seed, 54; plant Cucumber, 112; sow Endive, 58; plant Horse Radish, 59; plant Indian Corn, 60, Jerusalem Artichokes, 60; sow Leek seed, 61; Lettuce seed, 62; plant Melon, 119; sow Mustard seed, 65; plant Nasturtium, 66; sow Onion seed, 67; Parsley, 69; Parsnip, 70; plant Peas, 72; Potatoes, 74; Sweet Potatoes, 75; Pumpkins, 76; sow Radish seed, 77; plant Rocambole, 77; Rhubarb, 78; Salsify, 80; Scorzonera, 81; Sea-Kale, 82; sow Skirret, 84; Spinach, 86; plant Squash, 87; Tomatoe, 88 and 101; Turnip seed 92; Navet or French Turnip, *variety esculenta*, 47; make Hop plantations, 126. Sow the seeds of Angelica, Anise, Basil, Burnet, Boreage, Caraway, Chervil, Clary, Coriander, Dill, Fennel, Pot Marigold, Sweet Marjoram, Patience Dock, Sorrel, Summer Savory, Smallage, Thyme, Bene, Boneset, Catnep, Celandine, Saffron, and such other Aromatic, Sweet, and Medicinal Herbs as may be required. Also separate and transplant all kinds of perennial Herb roots, such as Mint, Pennyroyal, Sage, Winter Savory, Tarragon, and Medicinal Herbs in general, as described page 94 to 96. If not done last month, attend to the Spring dressing of Artichoke beds, 26; Asparagus, 30; Rhubarb, 79; Sea-Kale, 83.

Besides the work of sowing and planting the various kinds of seeds above enumerated, all the strongest plants of Cabbage, Cauliflower, and Lettuce, must be taken from the hot-beds and frames, and transplanted into the regular beds in the open garden. Attend to such other business in this department as was left undone last month, and see that the garden be kept neat and free from weeds.

FLOWER DEPARTMENT.

This is the most important month in the year for gardening operations. If not done towards the end of the last month

the covering must be taken from hardy flowering plants, early in this month, and the beds and borders attended to as directed, pages 140 and 155; at the same time, clip edgings of box, and clean, relay, or make new gravel walks, &c., 133; prune and transplant flowering shrubs, 156 and 160; transplant also hardy herbaceous plants, 152.

Sow flower seeds; the hardiest may be sown in the open borders, and the tender in the beds, 141 to 150.

All the soil of a garden should be dug this month, if possible, and pulverized as directed, 141 and 180.

It will be necessary to look over all the greenhouse plants in the early part of this month; let them be deprived of dead wood, if any, by a careful pruning; at the same time take off all yellow leaves; the earth at the top of the pots should be loosened, so as to admit the sun and air to the roots of the plants, 217 to 219.

If insects prevail on roses or other plants, a fumigation with tobacco will be necessary.

Bulbous roots will require some attention this month; those in bloom in the garden should be tied up to wires or small sticks; and those kept inside should be watered in proportion as they get heat and air.

The *Calla*, or Ethiopian Lily, and the different varieties of *Rhododendrons*, will need frequent watering while in bud and blossom.

Air must be admitted freely to all greenhouse plants towards the end of this month, in order to prepare them for the exposure of the open garden next month.

For the method of managing *Dahlia* roots, see 196; prepare to plant tender bulbous roots, towards the end of this, or early in the next month. The following should be forwarded in pots, which may be kept in a greenhouse or warm room, or they may be plunged in a hot-bed; *Amaryllises*, 183; *Gladioluses*, 198; *Lilies*, 202; *Tuberose* 210; *Tiger flowers*, 211.

Hydrangeas, *Pomegranates*, *Verbenas*, and other deciduous shrubby plants, should be cultivated early in this month to promote the production of leaf and flower buds.

Biennial seeds, such as *Wall-flower*, and *Stock Gilly-*

flower; also all kinds of tender perennials should be sown this month, if not previously done in the greenhouse, or in hot-beds, 141, 150 and 220.

For an exhibition of the order of the flowering tribe in this month and the next, the reader is referred to an article entitled the Beauties of April and May, pages 170 to 178.

FRUIT DEPARTMENT.

Finish pruning hardy fruit trees the early part of this month, also Apricot, 273; Almond, 276; Fig, 286; Mulberry, 308; Nectarine, 312; Peach, 322; not forgetting any other of these trees, vines and shrubs which were left undone last month.

Prepare the ground for planting, by digging, trenching, and manuring, either generally or in such particular places as are allotted for the trees to be planted in, 240.

This is the most proper season for planting the Apricot, Almond, Fig, Grape, Mulberry, Nectarine, Peach, and all such fruit trees, vines, or shrubs as originated in warm climates, 241, 311, 319. Apple, Cherry, Pear, Plum, Quince and other hardy fruit trees, may also be planted with safety early in this month; but Autumn is considered the most favorable season for planting all trees, vines, or shrubs of Northern latitude, 242, 337.

Those who have variety of soil should accommodate all the varied kinds of fruit to that which has been proved to be the best adapted to its culture; and due attention should be paid to situation and aspect, in planting a fruit garden or orchard, 243.

Use means to destroy insects while in a torpid state, to prevent their spreading, and also the larvæ of insects; directions for which will be found in the article headed "observations on insects, and diseases to which fruit trees are liable," 244.

Grafting may be performed on fruit trees in general 247; Prune and plant Currant bushes, 284; Filbert, 287; Gooseberry, 292; Raspberry, 345. Plant cuttings and suckers from these shrubs; also of such trees as produce

them, in order to get a supply of stocks to bud and graft upon, as well as some for bearing. Fruit stones and kernels of various kinds may be sown for the same purpose.

This is a good season to plant cuttings of Grape Vines, 286 and 300; and tender varieties that were lain down in Autumn, should be taken up, and fastened to trellises or stakes, 299.

Strawberry beds that were protected with leaves or litter through the Winter, should be uncovered, and the plants carefully cultivated; some lay straw over their beds, an inch or two thick, and set fire to it, 348.

As the warm weather progresses, the gardener should be on the alert, in order to conquer the various kinds of insects. Burn damp litter, stubble, leaves, weeds, &c. near fruit trees, and sow ashes over the ground. 248. 310.

MAY.

"Much dew on the grass, portends as all say,
That day which succeeds will be a clear day;
But when no dew moistens the grass on the plain,
Kind Heaven requites it by sending it rain."

VEGETABLE DEPARTMENT.

Throughout this month attend to plantations of Cabbages, Cauliflower, &c. hoe them frequently, and loosen earth around their stems; look out for and destroy grub-worms, caterpillars, and other insects, 12 to 14; thin out the early plantings of Beets, Carrots, Parsnips, Salsify, &c., and destroy weeds, to prevent their seeding the ground. Plant and sow such kinds of seeds as were omitted last month, and transplant Cabbage, Lettuce, Tomatoe, Egg-plants, &c. from the hot-beds and warm borders. Plant Beans, 33 and 34; Beet, 36; sow Borecole, 37; Brussels Sprout seed, 38; Cape Broccoli, 40; Cauliflower, 44; Cabbage seed, 46; Carrot, 49; Cress, 54; plant Cucumbers, 55; sow Endive seed, 58; plant Indian Corn, 60; Melon 63; Water Melon, 64; sow Mustard seed, 65; plant Nasturtium, 66; Okra, 66; Pepper, 71; plant Peas, 72; Potatoes, 74; Potatoe Sweet, 75; Pumpkins, 76; sow Radish seed, 77; plant

New Zealand Spinach, 87; Squash, 87; Tomatoe, 88. Early in this month, finish sowing all kinds of Aromatic, Pot, Sweet and Medicinal Herbs, 95 to 96. Some of the old hot-beds may be spawned for Mushrooms, but it is best to form new ones. Uncover productive beds once a week, and gather the produce; clear them of weeds and wet litter, and put a little dry hay or straw next the bed. Prepare fresh spawn, &c. 114 to 118.

Watering will now be frequently required to newly planted vegetables, both at the time of transplanting, and occasionally afterwards in dry weather, until the roots are established in the soil. Likewise seed beds recently sown, till the young plants become vigorous.

Weeding must be very diligently attended to, both by hand and hoe; for as weeds grow luxuriantly it is necessary to eradicate them, before they spread too far, as by neglect, they will not only impede the growth of, but eventually smother the plants.

Towards the end of the month, top such of the English Broad Beans as may be in blossom, to promote the swelling of the pods, as well as their early maturity.—See page 32.

Those who have young families should not fail sowing some Bene plant seed, as the plant by being plunged in a glass of water, produces a glutinous liquid, which is an efficacious remedy for Summer complaints. It may be sown in drills and managed the same as Salad or Parsley. See herbs, 95.

FLOWER DEPARTMENT.

As the warm weather progresses, the gardener should be on the alert, in order to conquer the various kinds of insects. Burn tobacco leaves in the greenhouse, so as to fumigate the plants well, before they are removed into the open garden; and such plants as may show any indications of being infested with the eggs of insects, should be sponged with soap-suds, and afterwards well syringed and watered. Frequent sprinkling from the rose of a watering-pot, will prevent insects from accumulating; especially if the water

be impregnated with tobacco, by a bag of the leaves being steeped therein a few hours previous to using it.

Choice Geraniums will need attention this month, in order that they may exhibit their flowers to advantage. When in full bloom, care should be taken not to wet the foliage or flowers, but this may be done freely before the buds are expanded.

If awnings were not provided last month, for the protection of choice flowers, it should be attended to early in this month, 184, 200, and 210; Plant Amaryllises, 184; Double Dahlias, 196 and 197; Gladioluses, 199; Lilies, 203; Tuberoses 210; Tiger flowers, 211; Sow annual, biennial, and perennial flower seeds in the open borders, 140 to 150. Attend to the walks, edgings, &c. and see that tall plants are neatly tied to sticks, wires, or stakes, 133, 139, 197 and 200. Procure and plant such perennial plants as may be necessary to make variety in the flower beds, 151 and 152.

Greenhouse plants may be set out about the middle of the month, and it should be done in cloudy weather, in order that they may be prepared gradually for the shining of the sun upon them. A situation, exposed to the sun for only one half of the day, is preferable for most plants, especially if they can be shaded at noon. 153.

Many plants, such as Coronillas, Heaths, Aucubas, Myrtles, Oleanders, and several other sorts, are subject to be infested with white and brown scaly insects; if these cannot be effectually taken from the plants by washing and sponging, let the plants be headed down early in the month of May, and if they are well attended to, new branches will shoot out on the old stem.

Such Orange trees as were budded last July or August, should also be headed down early in this month.

Auriculas, Polyanthus and Daisies, should be separated into single tufts, and planted in a shady border for increase, as soon as they have done blossoming.

Such Carnations as may have been wintered in frames should now be exposed to the open air, in the flower borders.

Tulips, which will be in full perfection by the middle of this month, will require constant attention.

Such greenhouse plants as may have done blossoming may be pruned this month, and if the cuttings be planted at this time they will strike freely.

Cuttings of *Salvia splendens* and *fulgens*, will produce strong plants for blossoming in August, if planted early in this month, 232. Chrysanthemum cuttings should now be put down, and the suckers divided, and planted singly in the borders, or in pots, for flowering in the Autumn, 220.

FRUIT DEPARTMENT.

Finish planting trees, vines, and shrubs as early in this month as possible ; those planted last month should be kept watered in dry weather, and stakes should be applied to such as may be exposed to the wind, 311, 319 and 337.

Finish grafting early in this month, 257. Apples, Pears, and other late shooting kinds may still succeed.

Strawberry beds may be made this month, and if the transplanting is well done, and the plants frequently watered, they will produce some fruit this year, and a plentiful supply the next season. The Methven Scarlet, and Mulberry or Pine, are large and yield plentifully. Kean's seedling, and also the Downton are of superior flavour. The Elton seedling, Southborough seedling, Myatt's seedling, and Bishop's orange, are in great repute where cultivated. The Wood and the Alpine Strawberry will produce finer fruit from seed sown in the Spring than from offsets. For mode of planting, &c., see article page 346.

If frost prevail when fruit trees are in blossom, those trained on trellises or against walls and fences, may be protected by hanging matting or sheets of tow cloth over them ; some defend them by sticking bunches of evergreens between the branches, as cedar, laurel, pine, &c. The object in doing this, is not so much to keep out the frost, as to break off the sun's rays in the morning after a frosty night ; see page 41, also flower department for December.

Propagate Fig trees, by layers, cuttings, suckers, and by grafting, 286.

If any webs or larvæ of insects appear on the leaves of fruit trees and vines, pluck off and destroy such leaves before the insects become quickened, which may be a means of preventing any depredation to the advancing leaves and buds. In large fruit gardens and orchards means should be used to destroy insects by fumigation, washing, &c. See observations on insects, and diseases to which fruit trees are liable, page 244.

Divest young budded and grafted trees of all shoots from the stocks, below the bud or graft, as they appear, also rub off all useless buds in early shooting wall trees, as Nectarine, Apricots, &c. 274.

JUNE.

"The sky dress'd in placid soft redness at night,
Portends the next day will be cloudless and bright;
A fierce angry redness that shoots up at morn,
And tinges the clouds, is a token of storm."

VEGETABLE DEPARTMENT.

The principal sowing seasons for general crops may be considered as past, but there are many kinds of seeds which may be sown this month; and the gardener should ascertain the success of his former plantings, in order to make up any deficiencies from failures, before the season be too far advanced. By this time, some of the early crops will be cleared off, and such ground as was manured for the early crops of Lettuce, Radishes, Spinash, &c., will be in excellent order for late Beets and Carrots. Hoe and thin out all standing crops, and clean vacant ground, to prevent weeds from running to seed. If the ground be dry, frequent hoeing will be beneficial. Use means to destroy insects; read pages 11 to 14 for information on this subject. Plant Kidney Beans, 33 and 36; Beet seed, 36. If the seedling plants of Broccoli, Cauliflower, Cabbage, &c. failed last month, sow again early this month. Water the beds frequently, and sow tobacco dust, soot, ashes, &c., or use the liquid recom-

mended, page 12. Transplant Cabbage, Celery, &c. for Summer use; transplant Cardoons, 48; sow Carrot seed in drills, 49; plant Cucumber seed in hills, 55; sow Endive seed, 58; plant Indian Corn, 60; transplant Leeks, 61; plant Peas, soak them five or six hours in water, 72; plant Potatoes, 74 and 75; Pumpkin seed, 76; sow Summer Radish seed, 77.

As the herbs come into flower, they should be cut on a dry day, and spread in a shady place to dry for Winter use, 96. Conduct Hop vines to the poles, and when they have reached the top, nip off the tops to strengthen the stems, 126.

Hoe between the Artichokes, and in order to have the main top fruit attain its full size, detach the small suckers, or lateral heads.—See page 26.

Early Cauliflowers, which will now be progressing towards maturity, must be watered in dry weather, and as the heads begin to exhibit themselves, break down some of the large leaves over them to protect them from the sudden rays of the sun, and from rain, 43.

Keep Asparagus clear of weeds, and also Onions; and give those beds that are to stand for ripening a final thinning, as suggested in page 67.

FLOWER DEPARTMENT.

The principal sowing season may be considered as past; but if any failures should have happened of former sowings, seeds may be sown the early part of this month, which if kept watered occasionally, will grow quickly.

Greenhouse plants will need watering every evening, in dry warm weather; and in the absence of dews, some sorts may need a little in the morning at sunrise, 218. Hydrangeas, Daisies, Polyanthus, Primulas, &c. should be kept shaded from the noonday sun, or they will droop, and some may die. Carnations and Pinks will need frequent waterings at the roots, and the branches should be tied neatly to rods.

Such flowering shrubs as may have been planted late in the Spring season, should be regularly watered in dry weather.

Give frequent waterings to the flower beds, in general; cut down dead flower stalks; remove decayed plants, and carefully replace them with vigorous ones from the nursery bed. Transplant annual flower plants into the regular beds, with a small trowel or neat dibble, 145.

Plant Colchicums, 186; finish planting Dahlias, and provide poles for their support, 197; water them occasionally in dry weather.

Many sorts of bulbous roots will be ripe by the end of this month; these should be taken up, and dried as directed, page 181. Those cultivated in pots should not be watered after the foliage is decayed, until the period of regermination takes place, 182 and 212.

Numerous beautiful flowers exhibit themselves this month, some of which are noticed in an article entitled *The Beauties of April and May*, page 170 to 178. There are, however, several others worthy of notice, which are omitted in that article. The several species of the Phlox are remarkably showy plants, and very desirable to cultivate, as they blossom in their several varieties the whole season. Besides these are all the splendid varieties of Roses, Pinks, Lychnises, Sweet Williams, Fox Glove, Snap-dragons, Perennial Lupins, Verbenas, Veronicas, Valerians, &c. These should be all attended to, and their branches should be tied to neat stakes, so as to enable them to exhibit their flowers to the greatest possible advantage, 147 to 152.

Dahlias that are intended for blossoming this year, should be planted by the middle of this month, if not done before.

FRUIT DEPARTMENT.

The principal business of this month in the fruit garden is Summer pruning, which is generally performed with the finger and thumb, by detaching all superfluous shoots and buds; and also to thin the young fruit of Apricot, Nectarine, and other choice trained trees, where it sets too thick or in clusters, see pages 274 to 310.

Newly planted trees should be watered in hot dry weather, once or twice a week.

Cherry trees of the finest sorts may be defended from birds, with nets, particularly those trained as espaliers, 277.

Currant and Gooseberry shrubs of choice late varieties, trained as espaliers or standards, if very crowded with shoots of the year, should be pruned, and the Gooseberry fruit thinned to promote its growth and ripening in full perfection, 284 and 292.

All trees on espaliers require attention; cut off such superfluous shoots as are not required to be trained-in, leaving well situated middle-sized shoots to supply the place of any old branches that it may be thought necessary to cut away. 274.

Grape vines should be looked over every week. Cut off all the tendrils and useless young shoots, and stop the shoots before the bunches of fruit. Train up the shoots for bearing next season, and to a proper length before you stop them. 305.

JULY.

"When *flowers* toward evening their bosoms expand,
And bask in the sunbeams, there's no rain at hand;—
But when they close up as if conscious of fear,
They augur its coming—it no doubt is near."

VEGETABLE DEPARTMENT.

This is a very important month for transplanting Cabbage, Cardoons, Celery, Endive, Leek plants, &c. for full Autumn crops. Prepare trenches for the Celery plants beforehand, in order that they may be ready to catch the rain. Leeks may be transplanted in dry weather by first steeping the roots in mud, and Cabbage plants too, if there be the least damp in the ground when it is fresh turned over. If Cardoons or Celery be planted in dry weather, the trenches must be shaded with boards. As grub worms are generally numerous in this month, plant with caution, try a few Cabbage plants first, and if none are eaten off, you may venture to proceed, and by the middle of the month, the danger is generally over.

If Beets and Carrots have failed, the seeds may produce good roots by Autumn, if planted early in this month ; plant Beans, 33 ; Cabbage seed may be sown now for Col-lards, 48 ; plant Cucumber seed for picklers, 56 ; sow Endive seed, and transplant the former sowing, 58 ; if Peas be planted now they should be soaked in soft water five or six hours previous, 72 ; Potatoes may be planted early in this month, 74 ; and Pumpkins if not done last month, 76. Sow Summer Radish seed in drills, 77 ; sow Turnip-rooted Cabbage seed, or Navet, 47 ; this is a good season for Ruta Baga, or Russian Turnip, 93 ; and the common kinds of Turnip seed may be sown towards the end of this month, 92. Attend to plantations of Hops, 126 ; whatever herbs may be required for Winter use, should be cut off and dried as they come into flower, Burnet, Chervil, Fennel, Mint, Parsley, Sweet Marjoram, Tarragon, Thyme, Winter and Summer Savory, may all be cut this month, 96.

The business of sowing and transplanting, will be more successful if done in moist or showery weather, or on the approach of rain, or immediately after, especially for precarious seeds, and young seedling plants. Attend to the Mushroom beds, and give light waterings, or expose them to warm moderate showers, occasionally, 114 to 118.

FLOWER DEPARTMENT.

Greenhouse plants will need daily care at this season ; let them be watered every evening in dry weather. Such Geraniums as may have grown large and unwieldy, should now be pruned, in order that their size and appearance may be improved, 219.

Garden Roses having done flowering for the season, should also be pruned. Cut out all old exhausted wood, and were it is too thick and crowded, shorten such shoots as have flowered, to a good fresh strong eye, or bud, accompanied with a healthy leaf. All wood that grows after this pruning, will ripen perfectly, and produce large flowers the ensuing year.

If dry warm weather, it may be necessary to water such flowering shrubs and roses as were planted in the Spring ; and if Dahlia plants could be watered two or three times a week, it would be beneficial to their growth. Give regular sprinklings from the rose of a watering-pot, or syringe, to shrubby plants in general, but particularly Camellias, Orange and Lemon trees, &c., in order to keep them in a healthy state.

Such bulbous roots in pots, whose foliage have withered, should be kept dry until the period of regenerating, 182 and 212 ; others may be taken up as soon as ripe, after which the offsets may be parted off, and both these and the parent bulbs dried for planting in Autumn, 181.

The flower garden should be kept weeded and watered, and the seeds gathered as they ripen ; apply neat rods to tall-growing and running kinds of plants. Nip off curled and dead leaves, and destroy insects. 133.

Orange and Lemon trees may be budded at any time this month, and those which were headed down in the Spring, should be examined, and all superfluous shoots must be pruned off with a sharp knife, leaving only the strongest ; the tops of which should be pruned off to promote their branching. Myrtles, Oleanders, and such other plants as may have been headed down in May, will need similar treatment.

Carnations, Pinks, Panseys, Running Verbenas, &c. may be layed this month for propagation, 151 and 154 ; many kinds of cuttings, as Geraniums, Roses and exotic shrubs, may still be planted with success, 166.

FRUIT DEPARTMENT.

Thin the fruit of Apricot, which will be good for pies and tarts, 274 ; thin Nectarines, also such Peaches and other fruits as may be desired in full perfection, 310.

Defend choice fruits from birds and insects, such as wasps, flies, &c. ; the birds may be kept off by nets, and the insects may be decoyed and drowned, by placing phials of strong liquor, honey, or sugared water near the fruit.

If annoyed with ants, place cuttings of reed, hollowed elder, or anything of a tube-like kind, in which they will harbour, and may be destroyed by dipping the tubes in hot water.

If mildew appear on grape vines, syringe them with water, in which a small quantity of sulphur and stone lime has been infused (it need not be over strong). To prevent any injurious effects from the lime, the vines may be syringed alternately with the liquid, and pure water, each two or three times a week.

Look over your fruit trees and grape vines; stop the shoots before the bunches of fruit, and train up such shoots as are reserved for bearing next year. Nip off curled and dead leaves, and destroy insects, 304.

AUGUST.

"When clouds slow dissolve, as if turn'd into air,
And vanish from sight, the next day will be fair;
But when, in succession, they darker appear,
With watery aspect, then know rain is near."

VEGETABLE DEPARTMENT.

The planting season being nearly over, now is the time to hoe around the plants and clear the ground of weeds and stubble. Dig or plough vacant ground ready for Fall Turnips, Spinach, Shallots, Feticus, &c. As the ground for the latter crops may require manure, it will be greatly improved if ploughed before the manure is drawn on, which should be afterwards spread and ploughed under.

Plant Beans for Picklers, 33; sow Cabbage seed for Col-lards, 48; earth up Cardoons, 48; do. Celery, 52; sow Corn Salad, or Feticus seed, 53; the early kinds of Cucum-ber may produce picklers if planted early in this month, 56; transplant Endive and prepare to blanch the early plantings, 58; Peas may be planted thus late, if desired, 72; sow Summer Radish seed, 77; prepare for planting Shallots by the end of this month, 85; sow Turnip seed for full crops, 92;

attend to such herbs as were not gathered last month, cut off and dry Sage, and other late herbs, 96. Hops will be ripe this month; choose a dry season for gathering them, and attend to them as directed, page 127; this is a good season for preparing to make Mushroom beds, in close sheds, cellars or pits; if the materials be gathered this month, indigenous spawn may be collected next, but those that can procure spawn may make the beds at any time, or they may pursue Mr. Nichol's plan, 116.

Artichokes will be in perfection this month, and should be cut for use as soon as the scales of the head expand, and before they open in the heart for flowering; and as you cut them, break down the stems to promote the growth of root offsets, 26. In dry weather hoe and plough between such vegetables as may have been planted in rows, which will not only destroy weeds but encourage the growth of the plants. Frequent hoeing in dry weather, will be more beneficial than the watering pot.

Early sown Onions, being now of mature growth, and full bulbed, should be pulled up in dry weather and exposed to the sun to ripen; frequently turning them, that they may harden equally for keeping; then clear them from the gross part of the stalks, and loose outer skins, earth, &c. and remove them to a place of shelter, 68.

Continue to gather seeds of all kinds as they ripen, and prepare vacant ground for late crops; such as Spinach, Shallots, Onions, Feticus, &c.

FLOWER DEPARTMENT.

Greenhouse plants will need particular attention this month. They should be watered every evening in dry weather, and as soon as the extreme heat of the Summer is past, which is generally by the latter end of this month, or early in the next, preparation must be made for replenishing with fresh compost, and repotting such plants as are intended to be cultivated through the Winter in a greenhouse, light room, or garden frames. Previous to the commencement of this business, let such compost as is suited to the various kinds of plants, be provided, 218.

Those who may have a number of plants in various sized pots, should provide a few new pots a size larger than the largest in use; the largest plants being shifted into the new pots, leaves the next sized pots for the second-sized plants, and by pursuing this plan of shifting until the whole are done, the smallest pots will be left for such plants as have been propagated in the course of the Summer.

The shifting of plants requires considerable attention and judgment, as some plants, if kept in too large pots, will sustain considerable injury: therefore, in such cases, where the fibrous roots have not spread around the pot, nothing more is necessary than to rub off a little of the outside mould, and then to substitute fresh compost for the roots to run in.

Such plants as may have become pot-bound, and whose roots are matted around the pot, will, in many cases bear reducing. If the matted roots are carefully pared off, and the plants shifted into good fresh compost, they will soon take root, and grow freely: but it will be necessary to prune off all surplus branches of the plants, previous to repotting them, and to shade them for a week or ten days.

Pieces of tile, or broken pots, should be laid over the aperture at the bottom of the pots, to enable the surplus moisture to drain off, or the roots will sustain injury.

The flower beds will need attention this month. Water Dahlias and other choice plants in dry weather; cut down all decayed flower stalks, as soon as the seed is gathered, and pull up annuals as they cease to flower.

Plant Oxalises in small pots, 205, and prepare compost for other tender bulbs to be planted in pots next month.

Rose shrubs, Orange, Lemon trees, &c. &c., should be budded early in this month if not done before.

FRUIT DEPARTMENT.

Pursue all that remains to be done of Summer pruning all trained fruit trees and vines, as in the last two months; destroy all irregular and unnecessary after-shoots, and train in a requisite supply of well-situated shoots, for bearers next year. 274 to 304.

Keep Raspberry beds clear of all straggling suckers; tie up such shoots as are adapted for next year's bearers to neat stakes, and keep the ground clear of weeds, 346.

Strawberry beds should be kept clear of weeds, and the runners may be taken from some kinds to make new plantations with, 347.

If dry weather prevail, as is generally the case at this season, hoe frequently between such young trees, shrubs, &c., in the nursery beds, as are well rooted; and water these which were recently transplanted.

SEPTEMBER.

"Light vapours o'er valleys and rivers at night,
Foretoken the next day salubrious and bright,
Especially when they at morning appear,
To rise up the hill sides, and vanish in air."

VEGETABLE DEPARTMENT.

Although the sowing season is nearly over, the crops on the ground require attention constantly. Endive may still be transplanted for Winter use. Hoe Cabbage and other vegetables, and attend to the earthing of Celery as it progresses in growth. Sow Rape, 39; Cauliflower seed, 42; Cabbage, 45; Corn Salad, or Feticus, 53; Cress, Rape, &c., every ten days for a Salad, 54; sow Mustard, for the same purpose, 65; sow Lettuce seed, 62; Onion to stand the Winter, 68; Radish for Fall use, 77; plant Shallots, 85; sow Spinach seed every week or ten days, 86; Turnips will sometimes come to maturity if the seeds be sown the early part of this month, and those sown last month will need hoeing as they progress in growth, 92.

Continue to gather, dry and pack Hops as they ripen, 127; also all aromatic, sweet, and medicinal herbs, 96; this is a good season to make Mushroom beds in sheltered situations; they may be spawned with indigenous or artificial spawn, as may be most convenient. For directions to preserve spawn, &c. see page 114.

Towards the end of this month, or early in the next, is a good season to increase all kinds of herbaceous plants, by parting the roots, but it should be done in cloudy or wet weather; at the same time, such plants as were raised from herb seeds sown in the Spring, may be transplanted into separate beds or borders, 94 to 96.

In this month must be finished all the principal sowings and plantings necessary this year; on this account such ground as is intended for principal crops next year, should be well manured previous to planting it.—See Spinach, 86.

FLOWER DEPARTMENT.

Such greenhouse plants as may have been repotted and pruned in the course of the last month, should be looked over, and if they have taken root, they should be exposed gradually to the Sun, and watered moderately in dry weather.

If any of the greenhouse plants were plunged in the flower beds, they should be taken up and pruned early in this month, and then put into suitable sized pots, 153.

Half-hardy perennials, such as Carnations, Daisies, Primulas, Lilies, Hydrangeas, &c. should be taken up divided carefully at the roots, and then put into moderate sized pots, and attended to as before directed for greenhouse plants.

Many hardy kinds of flower seeds may be sown this month, 142 and 151. This is a good season to propagate all kinds of hardy perennial plants, by parting the roots; and those that were raised from seed in the Spring, may be transplanted into regular flower beds, in cloudy or wet weather, 154. Plant Crown Imperials, 185; Persian Cyclamens, 186; Ixias, 201; Lachenalias, 202; Lilies, 202; Ornithogalums, 204; Oxalises, 205.

Such Chrysanthemums as are intended to be protected while in blossom, should now be taken up and planted in moderate sized pots, 220.

Seeds of Schizanthus, Ten-week Stock, Mignonette, and such other species as may be desired to decorate the parlour or greenhouse, should be sown this month.

FRUIT DEPARTMENT.

Plantations of Strawberries may be made this month, either with runners or seedling plants, 347.

Protect your Grapes and other fruit from wasps and other insects; either decoy them with honey or sugared water, or hang nets over the fruit; some are at the expense of putting the bunches into crape or paper bags.

Grape Vines and espalier trees in general, should be attended to, as directed in the previous Summer months; by depriving them of all useless shoots and suckers, training-in those branches intended for the next year's bearers, and destroying the eggs of insects, curled leaves, &c., 304.

Stone fruit, which will now be continually ripening, should be gathered while in full perfection, and not suffered to get over-ripe, so as to lose its peculiar flavour.

Ground allotted for the planting of fruit trees and vines the coming Autumn, should be prepared this month by digging, trenching and manuring, where necessary, 240.

OCTOBER.

"A warm open Winter doth often succeed;—
A hot and dry Summer, by all 'tis agreed;
A hard frosty Winter its rigour retains,
And holds gentle Spring in its cold icy chains."

VEGETABLE DEPARTMENT.

The principal Winter crops being planted, it will be necessary to prepare for maturing and gathering some of the Fall crops. Weed out Feticus, Spinach, &c. Hoe and earth up Celery, do it in dry weather, and not even while the dew is on it, 52; Asparagus, Sea Kale, Skirret, and Dill seed, may be sown this month. Towards the end of the month, frames must be provided for the protection of Parsley, Lettuce, and of such Cabbage and Cauliflower plants as were raised from seed sown last month. Begin to dig and secure all kinds of vegetables soon enough to get

the whole placed away before the end of the next month. Take up Potatoes and bury them in graves so as to secure them from wet and frost, or put them in a warm cellar. Proceed to take up other roots; begin with the tenderest kinds, or do that which is required to be done in dry weather, while it is so. Collect Pumpkins and Winter Squashes, and expose them to the sun and air on a dry bench, or ledge, before they are stowed away. Dig up Beets and secure them in graves, or pack them in sand in a cellar.

Aromatic, Pot, and Medicinal Herbs, should now have a thorough cleaning and dressing; by destroying all weeds, cutting away all decayed stalks, digging between such plants as will admit of it, and spreading earth over others, as suggested page 97.

Tie up full grown plants of Endive every week, in dry weather, for blanching in succession as required, 58.

Horse-Radish may now be dug for use as wanted, by trenching along each row to the bottom of the upright roots, leaving the old stools for future production, 59. Jerusalem Artichokes may be dug up for use, or to preserve for Winter consumption, 60.

FLOWER DEPARTMENT.

In the early part of this month, preparation must be made for the housing of greenhouse plants. Previous to this being done, let the room or greenhouse be white-washed with lime, which will prove pernicious to insects, and prevent their generating amongst the plants.

Begin the first week in this month to place all the shrubby plants, such as Orange and Lemon trees, on the back shelves; others should be placed that they can be cultivated to advantage, and they should all be arranged in regular gradation, so as to have the low-growing or dwarf plants on the front shelves.

Stockgillies and Wall flowers should be taken up, potted and kept in a shady situation, until they have taken root.

Such Dahlia plants as have been cultivated in pots should be sheltered from the chilling air, and those in the ground will need attention, 182.

Prepare the ground for all the hardy kinds of bulbous flower roots, 180. Towards the end of the month plant Anemones and Ranunculuses, 184; Crocuses, 185; Crown Imperials, 185; Gladioluses, 199; Hyacinths, 200; Irises, 201; Ixias and Jonquils, 201; Lilies, 202; Narcissus, 203; Ornithogalums, 204; Peonies, 205; Tulips, 209. For the management of bulbous roots in pots and glasses, see pages 212 and 213. Prune flowering shrubs, and make new plantations of them, 169.

Chrysanthemums should be neatly tied up to small sticks, and watered occasionally with liquid manure, to promote their blossoming in full perfection. Those in pots intended to be protected for late flowering, should be watched and taken in, on the appearance of a frosty night; they may, however, be exposed to the air as much as possible when it is soft and salubrious, as should all other half-hardy plants.

FRUIT DEPARTMENT.

Prepare the ground for planting all kinds of hardy fruit trees this month, by digging, trenching, and manuring 240.

Gather such varieties of Apples and Pears as are in full growth, both of Autumn eating and Winter keeping kinds; do it on dry days; let the keeping sorts lay in heaps to discharge their redundant moisture; after which convey them to a room adapted for preserving them through the Winter; lay each kind separate, and cover them up with dry straw, a foot or more in thickness according to the warmth of the room, which will preserve them in good order.

Prune Currant and Gooseberry bushes; make new plantations, and plant cuttings from these shrubs, prepared as directed in pages 284 and 291.

Plant the stones of Cherry, Peach, Plum, &c. in drills about two inches deep for the purpose of raising stocks and for new varieties; and in temperate climates, kernels of Apple, Pear, Quince, &c. may be sown in drills about an

inch deep for the same purpose. Plant also cuttings of hardy trees, suckers of Filberts, &c. 287.

Strawberry beds which were planted last month, should be kept free from weeds, and if dry weather prevails, they should be occasionally watered, 347.

Planting of hardy trees may be commenced towards the end of this month, or soon after the leaves show indications of decay, whether fallen or not, 242.

NOVEMBER.

"When *nuts* are but few, and they small and hollow,
A cold and wet harvest, there's no doubt, will follow;
But when they are plenty, and good, 'tis agreed,
A rich golden harvest is sure to succeed."

VEGETABLE DEPARTMENT.

Endeavour to avoid having your garden products frozen fast in the ground. Begin in good earnest to secure them; in fine weather dig up Beets, Carrots, and as many Skirret, Salsify, and other hardy roots as will be required for Winter use, and pack them close together in graves; give them a coat of straw, and afterwards heap on as much earth as will keep out the frost, or stow them in a cellar. Towards the end of the month, Turnips may be secured in the same way. Take up Celery in dry weather, and strike it in close together against a ridge, which should be previously formed in a straight line, about a foot above the level of the surface; throw up earth from the trench sufficient to cover them about an inch, and then plant row after row as close and upright as it can be placed, with just sufficient earth between every row to keep the roots and stalks from touching each other. The whole being covered up with earth, some long dung or litter may be thrown over it sufficient to keep out the frost; and by heaping a good layer of manure against the last row of Celery, it may be taken out at any time in the Winter for use. Some erect a board shed to preserve it from wet, or a small quantity may be kept in a

cellar. Cabbages must be taken up and laid in rows against a ridge, so as to form a square, compact, close-growing bed, the roots and stems being buried up to the lower leaves of the Cabbages. The beds may be afterwards covered with straw, or a temporary shed may be erected over them. Cabbages will keep for some months in a cellar, if connected with their roots. For the management of Broccoli and Cauliflower, see pages 40 and 108; Borecole, Brussels Sprouts, and Collards, may be taken up and stowed away like Cabbages. Cardoons may be laid in like Celery, or preserved in sand in a cellar. Leeks may be taken up and laid in rows close together against a ridge, and covered up as far as the lower leaves. If the last row be protected from frost by a coat of stable dung, they can be taken out when required for use. Corn Salad, Spinach, and Lettuce, may be protected by a covering of straw, salt hay, or cedar brush. For the management of Artichoke beds, see page 25; Asparagus, 29; Rhubarb, 79; Sea Kale, 83.

Dig up roots of Horse Radish in the manner recommended last month, to preserve in sand, or graves, for use when the ground is frozen and ice-bound. Do the like by Jerusalem Artichokes, which are now in their full perfection. At the same time take up as many Parsnips and other hardy roots, as will be required for use the next three months.

FLOWER DEPARTMENT.

During the continuance of mild weather, greenhouse plants should have air at all opportunities, and water in proportion, as heat and air are attainable, 218. Bulbous roots in pots and glasses will also need attention, 212 to 214.

Half hardy plants, such as Stock gillies, Wall flowers, Carnations, Primulas, Hydrangeas, Daisies, &c. must either be placed in frames, or in a greenhouse early in this month.

If Dahlia, Tuberoses, and other tender roots were not taken up last month, let it be done in due time this month, 181.

Cover up flower beds with leaves, straw, or light litter, 155; finish planting bulbous roots before the frost sets in. Plant Anemones and Ranunculuses, 184; Crocuses, 185;

Hyacinths, 199; Iris, 201; Ixias and Jonquils, 201; Lilies, 202; Narcissus, 203; Pæonies, 205; Tulips, 207 to 210. These, and all other kinds of plants, will need protection before the setting in of the Winter, 181. Flowering and ornamental shrubs may be planted in mild weather, 169; lay long litter round the roots of them, and also of the Grape vines and other tender plants, shrubs, &c., 167.

Before the Winter sets in severely, let such Chrysanthemums as have been cultivated in pots be planted in the garden, or as soon as they have done blossoming, 220.

Plant Gladioluses in pots, 199; also such other bulbous roots as may be required to be kept in rooms, page 212.

Mignonette, and other tender seedling plants under protection, will require attention at this season; they should not be over watered, or the plants will perish with mildew.

Camellias should be frequently syringed while in bud, or watered over the foliage with a rose attached to the watering pot, as should all other shrubs.

FRUIT DEPARTMENT.

Apple, Pear, Plum, Cherry, Chestnut, Mulberry, Quince, Walnut and other hardy fruit trees may now be planted; use caution not to injure them in taking up, or removing them; let holes be dug somewhat larger than is sufficient to admit the roots in their natural position, and of sufficient depth to allow of some good rich compost or pulverized earth to be thrown in before the trees are planted, see pages 241, 311, and 337, and read the article headed "observations on the choice of fruit trees in the nursery," page 259.

Finish gathering late varieties of Apples, Pears, Grapes, &c; do it in dry weather, and stow them away out of the reach of frost, as recommended last month.

Currant, Filbert, Gooseberry and Raspberry shrubs may be planted this month; at the same time cut out all crowded branches, superfluous suckers, worn-out bearers and decayed wood, 273, 284, 287, 291, and 346.

Strawberry beds made in August and September, as well as those of greater age, may be covered up with leaves, light manure, salt hay, or other litter.

Protect the beds where fruit seeds and cuttings were planted last month, by a covering of light manure, compost, or leaves of trees.

Winter pruning may be performed this month on some species of hardy trees, shrubs, vines, &c. and continued at all opportunities throughout the next month, 253.

DECEMBER.

"A wet sultry Summer, prognostics affirm,
A boisterous Autumn will bring in its turn;
A cold sour Autumn and Summer portend
A Winter severe from beginning to end."

VEGETABLE DEPARTMENT.

If all was not done as directed last month, there is now no time to be lost. Every thing that needs protection should be timely attended to, and if the weather continues open, some of the ground may be ploughed or trenched, to receive the benefit of Winter frosts. Collect all your pea sticks and bean poles together, and place them under cover to prevent their rotting. Turn over compost heaps, and provide manure for another year.

Those who are desirous of having Cucumbers or Melons, early in the ensuing Spring, and that have not the convenience for forcing them in the ordinary way, may dig a few grass sods or turfs, before it freezes hard, and stow them away out of the reach of frost, through the Winter. These being placed on the top of a hot-bed, in March or early in April, with the grass downwards; and Cucumber or Melon seeds, planted in the earthy part thereof, early plants may be produced which can be removed with the turfs without disturbing their growth, and cultivated either on the ridge system, as recommended in page 119, or in the open ground, provided they can be kept growing in frames until settled warm weather. This is also an excellent plan in early forcing, as it saves trouble as well as risk, in transplanting seedling plants into the fruiting beds.

If not done last month, dress your Artichoke beds, and cover them as recommended page 25. Defend Mushroom beds with dry straw, or long stable litter, and cover such as

may be exposed, with mats, as security against cold. In all moderate weather through the Winter, give air to Cabbage, Cauliflower, Lettuce, and such other plants as may be in frames, being careful to cover them every night with mats, boards, litter, &c. as necessity may require.

As the year is drawing to a close, I would solicit the gardener to review the results of his practice throughout the past season, that he may be able to judge how to act for the future.

In sketching a plan of his garden for the next year, he ought to make provision for a full supply of such vegetables as are best calculated to sell, and yield a fair profit; with this object in view, I would suggest that he take a retrospective view of his previous management, and also of the directions given in the preceding chapters relative to the preparation of the soil; by ploughing, trenching, pulverizing, manuring, &c. as circumstances may require; bearing in mind, that although clayey soils may be benefitted by Fall ridging, light sandy ground should lay flat through the Winter.

FLOWER DEPARTMENT.

If all was not done as directed last month, there is now no time to be lost. All kinds of tender plants in pots, should be set into frames or pits, and plunged in old tan or light mould; and in the event of severe frosts, coverings of mats, straw, &c. must be laid over them.

Greenhouse plants will need constant care and attention. When water is necessary, let it be given in mild weather, 217. In case of accidents happening from frost, I would remark, that the sudden transition from cold to heat, is often more destructive to plants than frost itself. If, therefore, plants get frozen, and cannot be screened from the rays of the Sun, they should be watered as the air gets warm, and before they begin to thaw. If sufficient attention be paid, so as to have the temperature of the house gradually rising, as the water is sprinkled over the leaves, it may be a means of preserving plants that would otherwise be destroyed.

See that the greenhouse, or room in which plants are kept, is so secure as to prevent the intrusion of cold air, or the departure of warm air in the night season.

Collect from heaths and rocks, such kinds of earth as are suited to the different species of exotic plants, and gather up leaves of trees. If you intend to make hot-beds of them, they should be put together dry; but if you intend them for compost, they may be laid together as wet as possible, in order that they may rot, for use in succeeding years.

FRUIT DEPARTMENT.

If any of the work recommended to be done in the last month was not accomplished, let it be done with all possible dispatch this month, as we know not what a day may bring forth.

Protect the stems of newly-planted trees. Cover with litter the roots of Grape Vines and Figs against walls, and cover the branches with mats, &c. In temperate climates prune Apple, Pear, Quince, and other hardy fruit trees; cut out rotten and decaying branches, 253.

To destroy insects on the fruit trees, and prevent them from creeping up and breeding on them, do as follows:

Take a strong knife with a sharp point, and a sharp hook-like iron made for the purpose; with these scrape clean off all the moss and outside rough bark, and with the knife pick out or cut away cankered parts of the bark and of the wood, in such a slanting manner that water cannot lodge in the sides of the stems of the trees. Having cleared the trees in this way, make up a mixture of lime, soot and sulphur; put these ingredients into a pot or tub, pour boiling water upon them, and with a stick stir and mix them well together. When this strong mixture becomes cold, and about the thickness of white-wash, take a brush, dip it in the mixture, and apply it to the stems and large branches of the trees, dabbing it well into the hollow parts of the bark.

The pruning of hardy fruit trees and hardy shrubs may be performed at all favourable opportunities through the Winter, 251 to 254.

For farther information on the Winter management of Fruit Trees, the reader is referred to the articles commencing pages 239, 244, 251 and 259.

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This summary view of estimates is annexed, in order to aid the Seedsman and Gardener in making out a bill of seeds for the purpose of planting any given quantity of ground, under the regulations suggested in the preceding chapters of this work, to which the reader is referred for a more concise view of the subject.

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QUANTITY OF GRASS SEED SUITABLE TO THE ACRE.

Clover, sown alone	12 pounds	Orchard Grass	2 bushels
Timothy	1 peck.	Rye Grass.	2 bushels.
Herds Grass	1 bushel.	Lucerne	8 pounds.

For a pasture for grazing, the following mixtures of seed would be found excellent, viz: 6 pounds of clover seed, 1 peck of herds grass, and half a bushel of Orchard grass seed—or 6 pounds clover, half a bushel of rye grass, and half a bushel of tall meadow oat seeds.

RETROSPECTIVE VIEW OF THIS EDITION OF THE YOUNG GARDENER'S ASSISTANT.

While making the preceding index, I availed myself of the opportunity afforded me of surveying the fruits of my labour; and, although I have to crave the reader's indulgence for several errors of the press and slips of the pen, which appear unavoidable in a work of this kind, I think I may assert, without exposing myself to the charge of arrogance or egotism, that this edition very far excels those before published, not only as to the additional amount of information it contains, but from the improved method in which the instructions are exhibited to the reader, who will, I am persuaded, discover on an attentive perusal of the work, that he has the various subjects laid before him in a concise, and at the same time an explicit manner. Several new and interesting articles have been composed expressly for this edition, on various subjects, some of which it is presumed, have never before been discussed for publication. The reader is referred to pages, 19, 23, 134, 146, 166, 220, 311, 319 and 337; also introduction to the calendar and index.

T. BRIDGEMAN.

New-York, March, 1840.

Garden, Herb, and Flower Seeds,

GREENHOUSE PLANTS,

BULBOUS AND TUBEROUS ROOTS, &c. &c. &c.

T. BRIDGEMAN would here remind his friends that he has a Seed Store and Greenhouse, corner of Eighteenth st. and Broadway, immediately north of Union Place Park; and West of the New-York and Harlem Rail Road; and he trusts he shall not be accused of arrogance or egotism for asserting his belief that upwards of twenty years' experience as a Gardener, and fourteen as a Seedsman, in the vicinity of New-York, entitle him to the confidence of the public.

He can only here enumerate a few of the leading articles in his collection, which he can conscientiously recommend as being well calculated to suit the market.

GARDEN SEEDS.—A full assortment of all those varieties of vegetable seeds that have been tested in this climate, and proved to have some good qualities to recommend them; none others will be offered at the counter.

HERB SEEDS.—Including Sage, Thyme, Sweet Marjoram, Summer Savory, &c.

FLOWER SEEDS.—Annual, Biennial and Perennial Flower Seeds of the most esteemed varieties.

GREENHOUSE PLANTS.—Consisting of several choice varieties of Geraniums, or Pelargoniums, China Roses, Cammelias, or Japan Roses, Carnations and various ornamental Plants, including Orange, Lemon Trees, &c.

BULBOUS AND TUBEROUS ROOTS—Hyacinths, Tulips, Narcissus, and such other bulbs as are calculated to blossom in pots or glasses; also, Gladioluses, Tuberoses, Amaryllises, Tiger Flowers, &c. together with a full assortment of **DOUBLE DAHLIAS**, embracing all the newest and most splendid varieties, of every shade and complexion.

HORTICULTURAL BOOKS.

THE KITCHEN GARDENER'S INSTRUCTOR, containing ample directions for the cultivation of Culinary Vegetables, Herbs, &c.

THE FLORIST'S GUIDE, containing practical directions for the cultivation of Flowers. Third edition improved.

THE YOUNG GARDENER'S ASSISTANT, containing practical directions for the cultivation of Culinary Vegetables, Flowers, Fruit Trees, the Grape Vine, &c. &c. Eighth edition enlarged.

Seedsman and Booksellers supplied on liberal terms.

MISCELLANEOUS ARTICLES.

BIRD SEEDS—Hemp, Canary, Yellow, Rape, and Millet; Flax, Timothy, Clover, and Grass Seeds; Split Peas for Soup; Scotch Barley Russian Mats, Flower Pots, &c &c. on moderate terms.

Bouquets of Flowers tastefully arranged, and delivered to order at the shortest notice.

ADVERTISEMENTS.

JUST PUBLISHED

The Kitchen Gardener's Instructor ;

Containing a catalogue of Garden and Herb Seeds, with practical directions under each head, for the cultivation of Culinary Vegetables and Herbs, with a Calendar showing the Work necessary to be done in a Kitchen Garden in every month throughout the season. Also, Directions for forcing and forwarding Vegetables out of the ordinary season. By T. Bridgeman, Gardener, New-York ; price 37½ cents, 144 pages, in neat boards.

The above is the title of the best little Gardening Manual ever offered to the public, and in apropos time, as the season is just about opening. The author of this work is well known as a practical gardener, and therefore writes from his own experience ; his directions for raising Asparagus, Celery, Cauliflower, Broccoli, Rhubarb for tarts, Tomatoes, and Mushrooms are worth all the price charged, as are also his directions for making and sowing a hot-bed. The Monthly Calendar is of itself an invaluable part of the book : In short those who are dissatisfied, after a perusal, will have their money returned.

G. C. THORBURN.

THE

FLORIST'S GUIDE.

"This is one of the best works on the subject ever published in any country : it contains Practical Directions for the Cultivation of Annual, Biennial, and Perennial Flowering Plants, of different classes, Herbaceous and Shrubby, Bulbous, Fibrous, and Tuberous-rooted, including the Double Dahlia, Greenhouse Plants in Rooms, &c. &c.

A Work of the above kind has been long wanted ; hitherto, it required an expenditure of some three or four dollars to get any sort of readable directions for small gardens, window gardening, plants in rooms, &c. which when procured, were so full of botanical foppery, that plain, honest people, after wading through some three or four hundred pages, were as wise as to knowing how to set about their gardening, as when they commenced their book. The present little work obviates all these difficulties. The Author is well known as one of our practical gardeners, and it may be truly said he has rendered the Ladies in particular (for whom the work was projected) an essential service ; the directions for the care of the Camellia Japonica, the Double Dahlia, the sowing and treatment of Annual Flower Seeds, are alone worth double the price of the book ; so is the Calendrical Index, which, by the untiring industry of Mr. Bridgeman, is made to include in some half dozen pages, more valuable information than in some ponderous octavos on the same subject."

[Commercial Advertiser.] Geo. C. Thorburn, 11 John street.

COMMENDATORY NOTICES

OF THE

YOUNG GARDENER'S ASSISTANT.

Extract of a review of this work in the Magazine of Horticulture, Botany, &c. published by Hovey & Co. Boston:

"The work is written in plain language, easily to be understood by the young beginner in gardening, who will find it a great help; and its value, even to the partly experienced person, is by no means of an ordinary character. IT IS ADAPTED TO OUR CLIMATE, and unlike compilations from English works, the novice is not led into disappointment by following the rules there laid down, as he generally is, when following advice of the latter. We repeat, that as far as the book pretends, IT IS WORTH ALL OTHERS OF A SIMILAR CHARACTER THAT HAVE EVER BEEN PUBLISHED IN THIS COUNTRY; and its cheapness should place it in the hands of all new beginners."

Extract of a letter from Lansingburgh:—

"Dear Sir.—You will see by the next month's New York Farmer, if you have not already seen by the Albany papers, that several copies of your 'Young Gardener's Assistant' have been given as premiums, by the State Agricultural Society. Mr. D. B. Shugart and myself were on the committee for awarding premiums, and thought your work was deserving encouragement, and that even in this small way, we might be of service in bringing it before the public as worthy of being given as PREMIUMS. "ALEXANDER WALSH."

"The first edition of 'The Young Gardener's Assistant' has been favourably noticed in France:—"One of the leading articles of the *Annales de l'Institut Royal, Horticole de France*, is a long notice of 'The Young Gardener's Assistant,' by Mr. Thomas Bridgeman, of this city. The editor, Le Chevalier Soulange Bodin, speaks of the little work in very commendable terms."—New-York Farmer.

"Among the plants, for the cultivation of which 'The Young Gardener's Assistant' contains directions, are a number of culinary vegetables not generally introduced into the United States. The introduction and successful cultivation of useful foreign vegetables add to the resources of our country. We recently saw, for instance, in Bridgeman's garden, several varieties of Broad Beans, *Vicia faba*, in a most vigorous and thrifty growth. They occupied a clayey spot of ground that was not suitable so early in the season for any other vegetable. They put forth a beautiful blossom, and would serve as an ornament for the flower garden.—New-York Farmer.

"From the systematic arrangement of the parts, under appropriate heads, and the plain and practical nature of the instructions, it must be an invaluable manual for those who may wish to superintend the management of their own gardens.—Albany Argus.

"It will we are persuaded be found, what the writer intends it shall be, 'generally useful to such as may wish to superintend, or take the management of their own gardens.' Mr. Bridgeman is a gardener himself, in the Bowery road, and his directions are therefore applicable, to our climate—an advantage of no little moment."—American.

"Written with a good deal of practical knowledge of the subject on which it treats. The directions given, the author says, are the result of twenty years' experience, and we dare to say, that though submitted in an unpretending form, they will be found as useful, if not more so, than those in more costly and expensive works."—*Courier & Enquirer*.

"No work on the subject of Kitchen Gardening, ever published in this country, has met with so very general approbation and extensive sale. Mr. Bridgeman is well known as one of our best gardeners, and writes from his own experience."—*Daily Advertiser*.

"The calendarial index is invaluable, and of itself worth the price of the book."—*Commercial*.

"That work which teaches us how to create and to improve this most innocent and useful source of pleasure, is surely worthy of applause and patronage; and such we consider 'The Young Gardener's Assistant.'"—*Advocate*.

"The work is calculated to be of immense service to those engaged in Agriculture, 'far from the busy haunts of men,' and to the disciples of Flora, in the city. Mr. Bridgeman is a practical gardener and seedsmen, and has lived many years on both sides of the Atlantic."—*Old Countryman*.

"From what we gather from the tenor of Mr. Bridgeman's book, we should suppose that he paid but little attention to the mere *on dits* or *dictums* of any, but that he pursued that course which his judgment pointed out; and in this particular, we value his book—leading the young gardener to learn to depend more on his own judgment than on the rules of custom."—*American Farmer*.

"All those who are desirous of a work on the subject of Gardening, and one which will convey the best information on the management of Hot-beds, Asparagus beds, best mode of raising all sorts of Esculent Vegetables, Pruning, Grafting and Budding Fruit Trees, Training the Vine, Preserving the Fruit from Mildew, &c. should procure this. No work on the subject ever published in this country has met with half as extensive a sale, or decided public approbation, as this valuable compendium. Mr. Bridgeman fully understands the subject on which he treats. The very rapid sale of the five former editions is quite a sufficient recommendation."—*G. C. Thorneburn*.

"We can assure gardeners and farmers, that they will in times and ways almost without number, be amply compensated by purchasing the book. Mr. B. bestows great labour on his productions of the pen, not only as to practical matter of fact, but to the various excellences of style, particularly to clearness, and the avoiding a redundancy of words. The amount of useful information in the book constitutes its value; and all this information is adapted to this country, and its climate and soil."—*American Gardener's Magazine*.

"BRIDGEMAN'S GARDENER'S ASSISTANT.—The sixth edition of this useful little manual is published, and is rendered of increased value by the addition of several matters not contained in either of the former editions. Among these is a short and convenient calendar to assist the gardener's memory."—*Evening Post*.

"From the cursory examination we have been enabled to give 'The Young Gardeners's Assistant,' we should judge that it embraces a greater amount of practical information, applicable to our climate, than can be found in any similar work. The list of fruit trees has been selected from the best authorities, both foreign and American, and is sufficiently extensive for any cultivator in this country."—*Newark Daily Advertiser*.

COMMENDATORY NOTICES OF THE FLORIST'S GUIDE.

THE FLORIST'S GUIDE.—A delightful little book, which we advise every body to purchase—at least every body that has the least liking for the pleasing occupation on which it treats.—*Courier & Enquirer*.

Mr. Bridgeman, of this city, has published a neat little work, entitled 'The Florist's Guide,' containing directions for the cultivation of flowers. It is a pleasant and instructive little book.—*Times*.

"The Florist's Guide," like its companion, "The Young Gardener's Assistant," is a useful work, which every Gardener and Florist may consult to advantage. It gives minute directions concerning plants of various species; the names and characters of each being alphabetically arranged, makes it an invaluable manual for those who may wish to superintend the management of their own gardens.—*Newark D. Adv.*

"The style is free, and the language appropriate; the plan is judicious, and the contents embrace much well arranged practical information, unencumbered with disquisitions foreign to the object of the work. We very cheerfully recommend it to our readers as a cheap and useful book."—*Gardener's Magazine*.

THE FLORIST'S GUIDE is the title of a duodecimo volume, of 140 pages, just issued from the press in this city. It is the production of Mr. T. Bridgeman, Gardener, Seedsman, and Florist, and contains directions for the cultivation of Annual, Biennial, and Perennial Flowering Plants, of different classes. A work of this description cannot but prove valuable to Horticulturists, particularly to those Ladies who are fond of that healthful employment of cultivating their own flower-beds.—*Gazette*.

We observe that Mr. T. Bridgeman, the ingenious author of 'The Young Gardener's Assistant,' has put to press another work, entitled 'The Florist's Guide,' containing directions for cultivating flowering plants and greenhouse plants of every description. It is very neatly printed, and although extending to 130 pages, is offered at the low price of 37½ cents per copy.—*Old Countryman*.

I have selected the foregoing notices from a long list of equally flattering testimonials relative to the merits of these works. This curtailment was rendered necessary by the very valuable additional information incorporated in the present volumes, which will be found much more complete than any of their predecessors. According to my humble opinion, this will add to the well-earned celebrity of their Author, and place his reputation on a permanent basis, as a sound, judicious, and able writer on "the delightful Art of Gardening"

THE PRINTER.

TO THE

PEOPLE OF THE UNITED STATES OF AMERICA.

FELLOW-CITIZENS:

An application having been made to your representatives in Congress, to vote a sum equal to five cents from each individual in the United States OR ABOUT A MILLION DOLLARS OF YOUR RESOURCES, to the promotion of an improved system of "*Terra-culture*," as described in Senate document No 23, of the third session of the 25th Congress, I hereby direct your attention to a few extracts taken from the applicant's preamble; copies of which have been forwarded to each member of the 26th Congress, in session, November 30, 1839.

From the Poughkeepsie Eagle, Saturday Morning, January 25, 1840.

PRESERVATION OF FRUIT TREES, PLANTS, &c
GREAT DISCOVERY.

To the Hon. Perry Smith, chairman of the United States Senate Committee on Agriculture of the 25th Congress. "With the consent and by the advice on the 23d inst., of the chairman of the United States Senate Committee on Agriculture of the 25th Congress, I forward to each member of the 26th Congress, the accompanying document dated the 14th inst; the object is to *show you some of the proof* that a discovery of vital importance to civilized man has been made, which in several letters from different members of the present and last Congress, is valued at HUNDREDS OF MILLIONS OF DAYS' LABOUR, AND WORTH MORE THAN ALL THE DISCOVERIES OF THE PRESENT AGE COMBINED—THE APPLICATION OF STEAM NOT EXCEPTED."

"For what purpose would all the owners of the public lands more freely or gratefully consent to give one hundredth part of those lands, or the proceeds thereof? Would they not be grateful to those members of Congress, who assist in giving the owners of the public domain the desired information, and reverence them as benefactors of human kind."

"For the honour of the republic, for the honour of the age, and for the interest and comfort of the living, as well as the unborn, let not that discovery which may cause two seeds to ripen where one now does, which prevents the premature death of all cultivated trees, which has been searched for in vain during the history of all civilized society, die with the discoverer for want of the action of the United States Congress."

Our patriotic discoverer "claims the following five discoveries as his, besides other discoveries which are stated in his memorial to the 25th Congress":—

1st. "That various diseases, universally supposed to be destructive to plants, are only symptoms that a particular error in cultivation has been committed; and that many other injurious effects have been produced by the same error, which are attributed to other causes."

2d. "That the error is UNIVERSALLY COMMITTED, to a greater or less extent, throughout the States, and that he has seen an excess of it wherever he has been, which is in the Atlantic States, from Georgia to Massachusetts inclusive."

3d. "That the PEACH AND NECTARINE are more easily injured by the error than most other Fruit Trees, and the cause of their being more easily injured by it; and that this error causes them to be barren, or short-lived."

4th. "That the application of two known laws in Nature demonstrate the reality of his discovery and its application to the whole vegetable kingdom; and that by them, his discovery, (if publicly known,) must be perpetuated, and his practice more easily introduced; and that by these two laws the occasional success of common remedies is explained."

5th. "That the said error is the obstacle which has discouraged experimenters, and lamentably retarded improvements in the science and practice of agriculture; and that he has discovered facts and made himself acquainted with knowledge sufficient to reduce them to practice."

We are further informed, "that it is neither climate, nor soil, nor insects, nor worms, that are the cause of many of the disastrous effects that have been attributed to them, but that those effects are produced by error in cultivation which diseases the smallest plant or largest tree."

Our modest and patriotic fellow-citizen admits in the course of his preamble, "that the practical part of his discovery is so **EXTREMELY SIMPLE** and economical, that it costs no more to prevent the diseases than it does to produce them; and that it is so different from the established theories and habits of the people, **THAT UNLESS A LARGE AMOUNT BE APPROPRIATED**, many will be unwilling to try it, and therefore the **PUBLIC GOOD** seems to require that a large amount should be appropriated." He moreover asserts, that "there are two known laws in Nature, by which the reality of his discovery, and its application to the whole vegetable kingdom, are demonstrable in *less* than thirty words."

That this invaluable *secret*, whatever it may be, is not strictly speaking a new discovery, is demonstrable by numerous living witnesses which have inhabited the fields and forests of the old world for over a thousand years; and our discoverer freely admits, and in very emphatic language, that there are thousands of trees in our own country on which, what he terms "the common error," has never been committed; and also, that several of the fifteen gentlemen to whom he communicated his secret, *confidently forever*, have some such trees on their own domains.

Hear him—"The Senator from Missouri, (Mr. Linn,) said, that the most flourishing and healthy Peach tree in his possession had never had what I call the common error in cultivation committed upon it."

"The Senator from Pennsylvania, (Mr. McKean,) said, that he had long supposed that what I call the common error, was an error, but that he had no idea of such extensive evils arising from it."

"The Senator from Maryland, (Mr. Spence,) said, that in his district it was a universal custom to commit what I call the common error in cultivation, on the fruit trees, and that it was as common to have no Plums perfect and free from worms, excepting on a few of his, on which the error had not been committed for twenty years, if ever; and those few (four) continued to bear abundantly annually; that he had no recollection of ever seeing an imperfect wormy Plum on either of these four trees, but that he had never supposed that to have been the cause of their perfection."

The Senator from South Carolina, (Mr. Calhoun), to whom I am indebted for pointing out one symptom of the error, and for a valuable suggestion in the culture of plants, said, "while examining the defective trees around the Capitol, that the principle when exhibited, was very plain and simple, that it was philosophical, and in his opinion it could not be neglected without injury to the health and growth of trees and plants, and deserving of public patronage."

"The Vice President of the U. S. (Mr. Johnson,) said, that my discovery was perfectly consistent with the laws of Nature; and, (when observing a few trees near the Capitol, which had been injured by the error, and were recovering,) further remarked, that my theory was *essentially correct* and obvious to the most superficial observer."

"The member from New-York, (Mr. Jackson,) said that he had reared an orchard on which he had carefully avoided an excess of what I call the common error, and that it had been admired as the most flourishing and fruitful orchard in the neighbourhood; and that he had recently seen a field of Indian corn, which yielded more than one hundred bushels of shelled grain to the acre, in which an excess of the error had been avoided, while the success was attributed to quite a different cause."

From the preceding extracts, it is evident that this inestimable treasure lays near the surface; and from the disclosure having been communicated to rational and intelligent minds, it is preposterous to expect that those gentlemen *can*, in the pursuit of their rural avocations, act directly contrary to knowledge and sound judgment; they must, therefore, necessarily and unavoidably communicate the *secret* by their example, which will eventually disseminate, in proportion as mankind take an interest in the merits of the alleged discovery.

But lest the full benefits of this invaluable remedy should be withheld from the community for want of the action of the United States Congress, I have submitted an exposition of *my virus* of the particular points adverted to in the preamble, which may be found under the heads, Nectarine, Peach, and Plum, pages 311, 319 and 337, of the eighth edition of the Young Gardener's Assistant; and I would furthermore remind my readers, that the directions heretofore given in this and previous editions of the work, are in strict accordance with the same doctrine; and that although the error alluded to is admitted to have been very generally committed, I am not aware that any writer has ever taught or encouraged the error, either direct or indirect; I confess, however, that I have been induced to expatiate on this *malpractice* in horticulture, from the subject having elicited the grave consideration of enlightened legislators of these United States.

And lest these my voluntary disclosures should prove to have no bearing on the alleged discovery, I would prepare the public mind for its reception by an exhortation to TEMPERANCE AND MODERATION, as the *only safe course* that can be considered applicable to the cultivation of all the varied species of plants, which comprise "the whole vegetable kingdom." In articles, pages 19, 134, 146 and 217, I have shown that the various species of plants which occupy our greenhouses, gardens, and fields, *require each their peculiar aliment*—they having been collected from all the diversified regions, climates, and soils through earth's remotest bounds; they consequently comprise natives of mountains and rocks, as well as of plains, valleys, and water courses. The most essential aliment for natives of warm climates and dry soils being HEAT, artificial means are used in cool seasons, and unpropitious climates to produce it. Natives of temperate climates require salubrious AIR, hence they are cultivated to the greatest perfection in our Northern States in Spring and Autumn; and in our Southern States in the Winter; see page 355, and natives of humid climates, as also amphibious plants in general, require a more than ordinary share of MOISTURE, and grow best in wet soil; but these THREE ELEMENTS collectively constitute the food of plants in general, and should be judiciously imparted to the various species, in due proportions according to circumstances. See pages 41, 54, 57 and 358, for a more concise view of this subject. I have also shown, that the roots of various species of plants require each their peculiar aliment, which is not to be found in all descriptions of land; this is demonstrated by roots of trees being frequently discovered spreading beyond their ordinary bounds in quest of salutary food.

Although it has been admitted that excessive deep planting of trees and plants is injurious, and in many cases fatal to their very existence, it does not follow that *all* annuals and biennials are injured by the same means; on the contrary, the earthing up of particular species of plants in a late stage of growth is calculated to promote early maturity, which

constitutes the most essential art in gardening for the market; because the earliest crops are always the most profitable. It is moreover a necessary practice in climates where the seasons for gardening are short—as without such practice, many kinds of vegetables could not possibly be matured in due season for gathering before Winter.

I would here take the opportunity of proving this last position, by reminding the reader that the effects of deep planting, the Peach tree for instance, is discoverable soon after the error is committed, by its fruit ripening prematurely, and this is often the case for a year or two prior to its final decease, and should operate as a salutary lesson against planting perennial plants and trees too deep.

In conclusion of this article, which is intended as an appendage to my works on gardening, I would urge gardeners and cultivators to consult the operations of Nature in all their rural pursuits; and with a view to aid them, I subjoin the following rules, which are further illustrated under the different heads:

1. In transplanting fruit trees, let the collar, or that part from which emanate the main roots, be near the surface. A medium-sized tree may be planted an inch deeper than it was in the nursery bed; and the largest should not exceed two or three inches, see pages 311, 319, 337 and 367 of the *Young Gardener's Assistant*, eighth edition.

2. In the cultivation of such plants as are transplanted, or grown in hills or clusters, as Indian Corn, &c. keep the earth loose but level around them in their early stages of growth, by frequent hoeing, ploughing, or cultivating; and to promote early maturity, throw a moderate portion of earth about the roots and stems at the last or final dressing.

3. In the sowing of seeds, remember that IN UNITY THERE IS STRENGTH, and that from the germinative parts of a seed being weak and diminutive, it cannot be expected to perforate through the soil, solitary and alone. To insure a fair chance plant your seeds moderately thick, and thin out the surplus plants while young. In planting seeds in drills, which is the most eligible plan, the size of the seed and strength of its germ should be considered; large seeds, producing vigorous roots, require deeper planting than diminutive seeds, producing delicate roots and slender stalks.

4. In the choice of compost for exotic or greenhouse plants, imitate the native soil of each peculiar species as nearly as possible, by a judicious mixture of *maiden earth*, loam, sand, leaf, swamp and rock mould, decomposed manures and such other composts as are recommended under the different heads. Remember, that although strong manure is essential to the growth of some plants, it is poisonous to others. *Potatoes, THEN, A MEDIUM COURSE.* From your soil not being too stiff or too light, too rich or too poor, too cool or too warm, too close or too porous, if not positively salutary and congenial to all, it must render the situation of each endurable. I again repeat, that temperance in the use of aliment, is as essential to the welfare of the vegetable family, as it is to the health, happiness, and longevity of mankind.

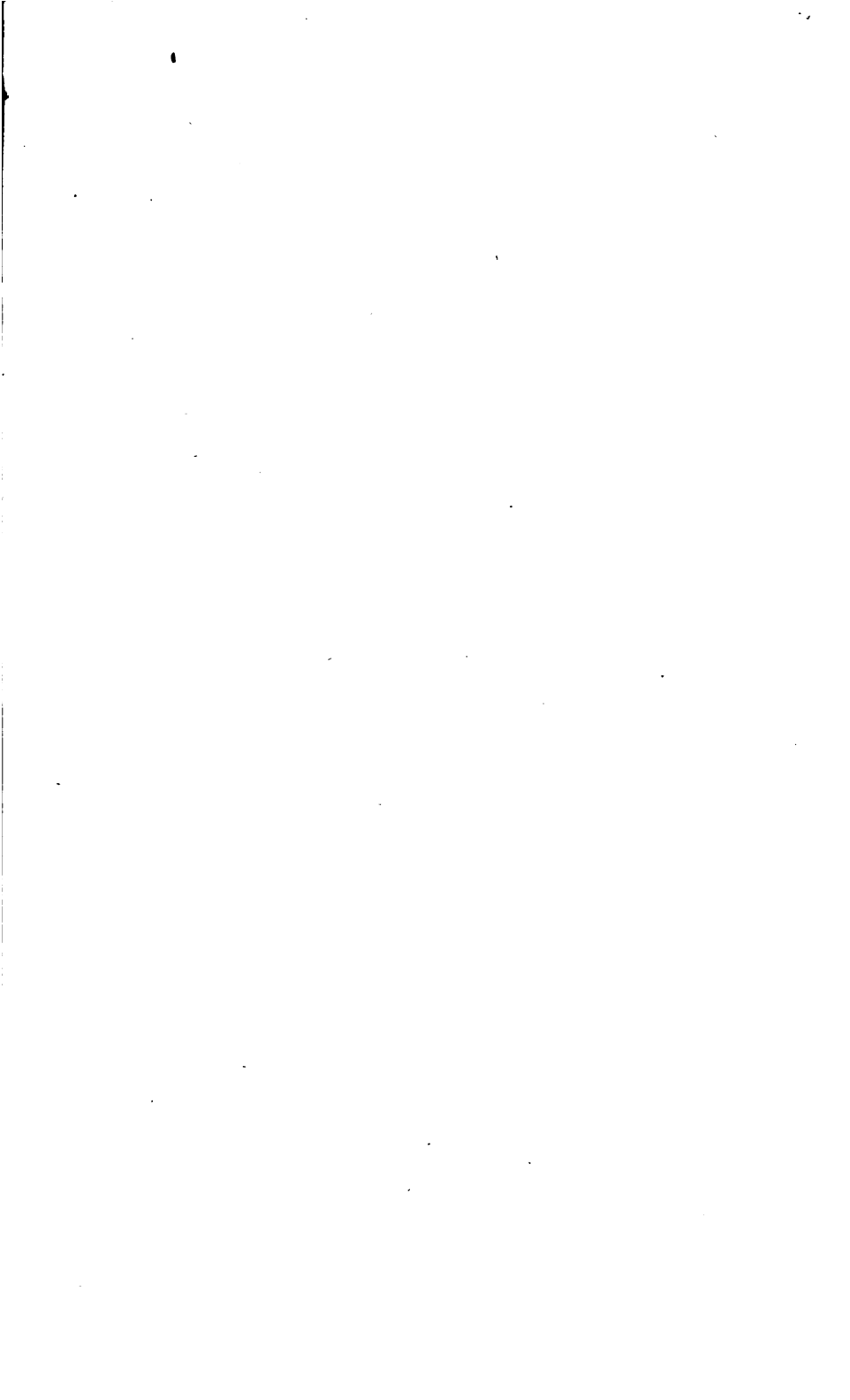
T. BRIDGEMAN.

New-York, March 4, 1840.

Since this address has been in press, I have seen another article in the *Poughkeepsie Eagle*, dated February 23, 1840, wherein our modest and patriotic discoverer gratuitously pronounces his knowledge as superior to that of "*all Botanical and Agricultural known Writers!*" As I have anticipated the merits of this second valuable discovery in my books, I have nothing more to say than to remind the reader, that this uncalled for attack on the brethren of my fraternity, fully justifies the publication of these my voluntary disclosures.









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